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JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION

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THE SIXTY-EIGHTH ANNUAL CONVENTION OF THE AMERICAN PHARMACEUTICAL ASSOCIATION WILL BE HELD IN WASHINGTON, D. C. DURING THE WEEK BEGINNING MAY 3, 1920.

The American Conference of Pharmaceutical Faculties and the National Association of Boards of Pharmacy will also meet in Washington during week of May 3, 1920.

The U. S. Pharmacopoeial Convention will meet in Washington during the week of May 10, 1920. (Centennial Year of U. S. Pharmacopoeia.)

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Honorary President of the American Pharmaceutical Association

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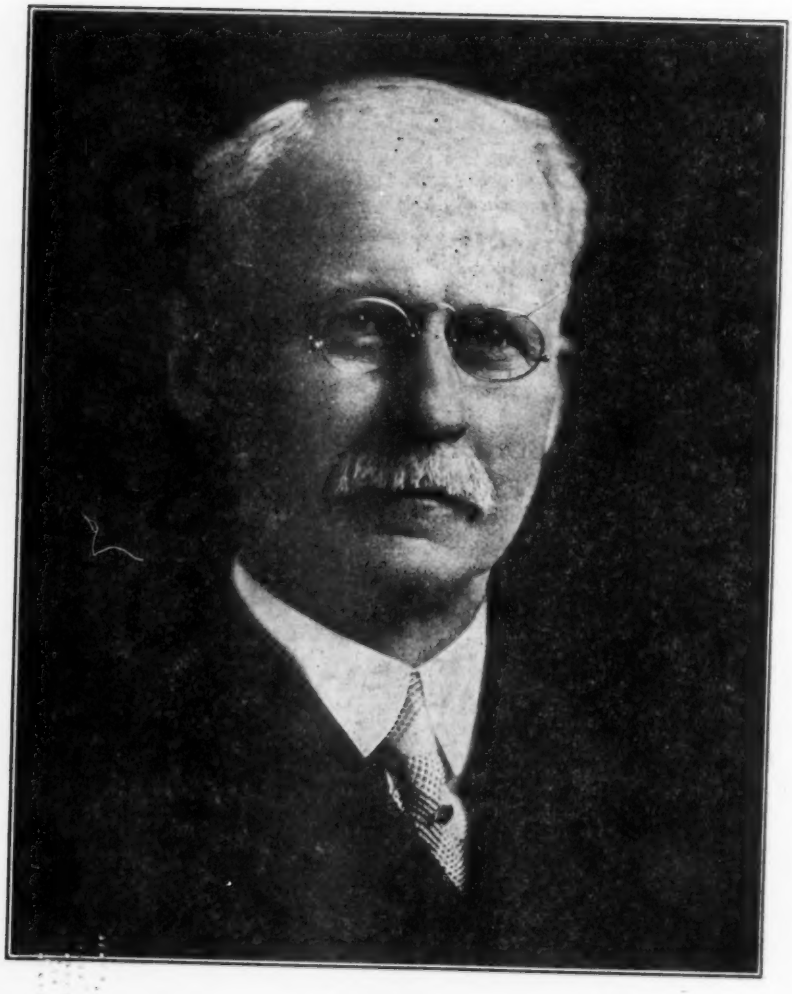

A. B. STEVENS

JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION

VOL. VIII OCTOBER, 1919 NO. 10

ALVISO BURDETTE STEVENS.

The Honorary President of the American Pharmaceutical Association for 1919 to 1920 is A. B. Stevens, who, until the conclusion of the last school year, was professor and dean of the Pharmacy Department of the University of Michigan.

The subject of the sketch was born in Tyrone, Livingston County, Michigan, June 15, 1853. His mother died in 1863 and his father gave his life for the preservation of the Union in the battle of Cold Harbor, in 1864; thus, at the age of eleven years, Alviso Stevens was left an orphan. He was educated in the public schools of Byron and Saginaw of his native state and, in 1875, graduated from the Pharmacy Department of the University of Michigan.

From an errand boy in a drug store he worked up to the position of manager. In 1877 he became proprietor of a Detroit pharmacy and specialized in analytical work, and also taught pharmacy in the Detroit Medical College. In 1886 he retired from active business to become instructor in pharmacy of his Alma Mater; he was elected lecturer in 1890 and assistant professor in 1892. After two years of special work in Europe he received the degree of Ph.D. from the University of Bern, Switzerland. He was thereafter advanced to full professorship and succeeded the late Dr. J. O. Schlotterbeck as dean of the Pharmacy Department, University of Michigan, and is now, after retirement, at home in Escondido, California.

Professor Stevens was the first president of the Detroit Pharmaceutical Society, 1883–1884, and president of the Michigan Pharmaceutical Association in 1894. He was chairman of the Pharmaceutical Division of the American Chemical Society, 1908–1910, and in charge of *Pharmaceutical Abstracts* for the A. C. S. from 1905 to 1911.

The Honorary President joined the American Pharmaceutical Association in 1885, was first vice-president, 1890–1891; the first secretary of the Section on Education and Legislation, and the chairman, 1891–1892. He served on all the committees for revising the National Formulary and on the last two committees on Revision of the United States Pharmacopoeia.

Professor Stevens was vice-president of the American Conference of Pharmaceutical Faculties, 1908–1909. He has been a liberal contributor to pharmaceutical publications. On account of the number of his contributions to the American Pharmaceutical Association reference thereto is made to the indices of its Proceedings and Journal. The paper by him, in 1907, with collaboration of L. E.

Warren, on "Poison Sumac," was awarded the Ebert Prize. He is author of an "Arithmetic of Pharmacy" and a volume on "Pharmacy and Dispensing."

The promotion of Dr. Stevens by his election as dean of the Department of Pharmacy of the University of Michigan was amply earned by efficient service on the faculty for a quarter of a century, and the election as Honorary President of the American Pharmaceutical Association was a well deserved recognition of valuable services rendered to American pharmacy in general and the Association in particular. In 1876 Mr. Stevens was married to Miss Amoretta L. Search, a former university classmate of Janesville, Wis. She passed away February 6, 1918.

E. G. E.

AN APPRECIATION.

The successor to Dean A. B. Stevens, Dr. Henry Kraemer, has sent in the following appreciation:

"If I were to summarize the characteristics brought out in the life of Dr. Stevens I should say that they are distinguished by three qualities: 1, purity of soul; 2, helpfulness of disposition; 3, a scientific mind. His every action and word exhibit these qualities. He has not a single habit which departs from rectitude and uprightness, and he is an example to every one who comes in contact with him.

"His desire for service is seen by the esteem in which he is held by students, alumni and neighbors. He never loses an opportunity to do a kindness and is always ready to serve any worthy object.

"Dr. Stevens' scientific work is among the best produced by American pharmacists. He has the ability to resolve almost any situation in its true light. His work on poison sumac will stand as a basis for all future work, and his studies on the distribution of the cyanogenetic glucoside in wild cherry are not only of interest in pharmacy but are a contribution to physiological botany. It is largely due to Dr. Stevens that the chemical assay processes in the U. S. Pharmacopoeia are generally acceptable and satisfactory."

EDITORIAL

E. G. EBERLE, Editor 253 Bourse Bldg., PHILADELPHIA

THE WORLD WAR VETERANS' SECTION.

TEN thousand pharmacists were called from the paths of peace to the work of war. These men served in every branch and in all ranks. They are now going back to pharmacy richer by wonderful and soul-stirring experiences. No matter where they served or in what capacity, whether on the battle line, in the supply service, in Siberia, at Archangel, or in the United States, whether as pharmacists, as dispensers, as first-aid men, as medical supply officers, or as combatants, whether as privates or as officers, all these men will have in common the memory of the fact that when the liberty of the world was at stake they offered their lives to make that liberty secure.

How natural, therefore, it will be for these men to seek association with each other where the mutual memories may be shared of dangers experienced and of risks run, where they may tell each other of the long, dull monotony of routine work and of the fierce joy of battle, and where they may be sure of finding men whose interests are the same though their experiences may have been most diverse. An opportunity for bringing about just such associations is offered freely and without cost in the World War Veterans' Section of the American Pharmaceutical Association which was organized at the New York meeting.

Every pharmacist who served his country no matter in what capacity is invited to become a member of the World War Veterans' Section of the American Pharmaceutical Association without money and without price. By vote of the general association every World War Veteran who was a pharmacist or a student of pharmacy is invited to become a member of the Association without the payment of any initiation fee, and without any charge for the first year's dues. Surely every pharmacist who served in the war will welcome this opportunity to get into touch with fellow pharmacists who have also served.

Every reader of the JOURNAL should bring this matter to the attention of all who have served either in the Army or the Navy and urge that they forward applications to the secretary of the Section, Captain W. D. Walters, care of the Wm. S. Merrell Company, Cincinnati. No special form is required and no financial obligation is imposed. Merely send a post-card stating the facts as regards service in pharmacy and in the war. No matter whether the service was in the medical department or outside, no matter whether it was as a teamster, a runner, a machine gunner, a hospital dispenser, a hospital orderly, or a medical supply officer, the mere fact that the applicant is a pharmacist or a student of pharmacy, that he served his country and that he has not been dishonorably discharged puts him into the class of men who have received this cordial invitation from the oldest pharmaceutical association in the world, to become an honored member without cost.

The World War Veterans' Section is the direct outgrowth of the work done by the Advisory Committee for Soldier and Sailor Pharmacists under the chairmanship of Frank H. Freericks, Cincinnati, Ohio. Over a thousand pharmacists have already been aided to return to civil life under favorable conditions by this Committee and the committee is still vigorously at work, placing in civil life men who are leaving the Service.

This invitation will bring into the Association a splendid group of young, vigorous and enterprising men who will undoubtedly exert a wholesome influence both upon the organization and upon pharmacy, and who, in turn, will undoubtedly be favorably influenced in their relations to pharmacy and their obligations to their calling through membership in the World War Veterans' Section, a section which carries in it the seed of wonderful possibilities for a most helpful and useful future.

CASWELL A. MAYO.

PHYSICIANS' AND PHARMACISTS' RESPONSIBILITY FOR THE SO-CALLED WORTHLESS AND SUPERFLUOUS MEDICINAL PREPARATIONS.

BEFORE a class of medical students the lecturer was commenting upon the subject of an elixir of the three bromides. He pointed out that since the bromine ion was the hypnotic ingredient of the salts entering the preparation it would seem that this prescription was irrational, as has been stated by the best medical authorities—that a solution of any one of the bromide salts would be as efficacious as the three salts combined; that the combination of bromine with the three different bases did not seem to have any special merit. One of the medical students of the class took occasion to inform the professor that in his part of the country an elixir of five bromides was most popular among physicians of his acquaintance.

The question naturally arises—where lies the responsibility for these unworthy preparations or drugs? Who should stand sponsor for them and why?

There is a small uninformed number of the medical profession who believe the pharmacists are responsible for the so-called irrational preparations, and some of the members of the pharmaceutical profession believe that they were brought into existence by physicians. Neither view is tenable. The fact is, most physicians and pharmacists are alike responsible for the popularity of these. The pharmacists, as a rule, will not pronounce upon the therapeutic value of any finished product. Pharmaceutical manufacturers frequently receive private formulas from physicians such as would not pass censorship but they do not pass upon their clinical value—whether certain ingredients in these compounds are considered by experts as superfluous, irrational or useless. We need some able and constructive criticisms of existing pharmaceutical preparations and it would seem as if, in this particular service, physicians and pharmacists might well co-

operate. On the higher lines and strata of the professions of Pharmacy and Medicine there is no antagonism, but the moment we descend into the commercial there is always friction and antagonism. Pharmaceutical science is worthy of the medical man's respect. Pharmacy is as much of an art and science as legitimate medicine. It is this fact the physician should recognize. It is true that it is not nearly as evident, for in the very nature of the retail drug business there is bound to enter a preponderance of commercialism that even the cheap doctor does not exhibit. If legitimate Pharmacy were absolved from this sin, which weighs upon it so highly, medical men would soon recognize the nobility and idealism of the profession. Let the best physicians come into contact with the best pharmacists and note results.

It would seem that now since we are approaching the revision of our national standards such coöperation should be emphasized. One of the most difficult points that the committees of revision of the United States Pharmacopoeia and the National Formulary have to face is that which relates to the drugs and preparations that are to be included for the use of the medical profession in the treatment of disease. Different groups of physicians have various conceptions as to the value of these. One group is convinced that a given class or set of drugs gives excellent results in their practice. Another feels equally positive that the drug or preparation is of little use. It should be borne in mind that the function of the Pharmacopoeia is not to determine whether or not one physician or set of physicians shall be relied upon or made sponsors for these different sets of preparations. It should also be borne in mind that the primary purpose of the Pharmacopoeia is to provide standards which will insure uniform and reliable drugs and preparations. The selection of these should be placed in the hands of medical men and their value determined in their practice.

In order that the number of so-called useless and unwarranted drugs and preparations shall be eliminated or materially reduced, it is fair to assume that the members of the medical profession should have, probably, a ruling voice but, in our opinion, the object sought will be promoted very much more rapidly if a hearty coöperation is effected with the representative pharmacists. The pharmacist supplies what is demanded and, naturally, if he uses his business and pharmaceutical skill, he will create, improve and multiply preparations to meet his patrons' wants. He will promote his branch of Medicine to the extent of his business and scientific ability. If he has the guidance and cordial coöperation of the medical profession he will do this with much more intelligence than he otherwise would. We should get rid of the idea that pharmacists are responsible for the multiplication of these so-called unworthy preparations. The medical profession should not be unwilling to bear part of the responsibility for their continuance. Physicians continue, in spite of everything, to prescribe preparations which the Council

on Medical Education proclaim to be worthless and superfluous, stating that they obtain favorable clinical results. Certainly one very desirable result would be obtained if a coöperation between pharmacists and physicians existed—it would remove, to some extent at least, the prejudice which now exists between the two professions which tends to restrain and retard effective coöperation and coördination in the aim and end previously indicated.

The American Medical Association has opened the way and made progress in the direction named, having pronounced its own point of view, which should be duly recognized. It is natural that the point of view of the American Pharmaceutical Association differs from that of the former association, and the pharmacists' views should also be respectfully considered.

As to clinical evidence, Rule 5 of the Council on Pharmacy and Chemistry of the A. M. A. states: "To be acceptable, the clinical evidence must offer objective data with such citation of authority as will enable the Council to confirm the facts and establish the scientific value of the conclusions drawn," etc. This rule would be helpful in the coöperative work.

As to unscientific and useless articles, Rule 10 of the Council should be expanded and made more definite. A basis might be discovered whereby one could more definitely determine whether an article or preparation is unscientific or useless.

Rule 10 reads as follows: "The use of articles which are unessential modifications of official or established non-proprietary articles is unscientific and serves no useful purpose. * * * * * This includes mixtures containing an excessive number of ingredients; those which contain substances of no probable therapeutic assistance to each other; those of no therapeutic value. The combination of two or more remedies in a mixture must be considered contrary to scientific medicine unless a distinct reason exists for such a combination," etc.

It should be added that a paper upon this subject was read before the American Pharmaceutical Association by Prof. L. E. Sayre and was published in Volume VIII, No. 5, of THIS JOURNAL. The debate which followed the reading of this paper was participated in by Dr. Bernard Fantus who stated, in substance, that it was to be hoped that the physicians would meet the pharmacists as they ought to. He further said: "You know doctors have quite a way of being autocratic in the sick room and they get to feel that they have the right to be autocratic in all respects, and many of us here, I suppose, including myself, are opinionated. The fact Hippocrates discovered and published, that experience is fallacious and judgment difficult, is so true of medical practice that the opinion of any one physician or any number of us, on such questions as the desirability of certain preparations, should not be regarded altogether too seriously. I am convinced that pharmacists could be of great help to physicians in their learning about the value of preparations."

THE REPORT ON THE PROGRESS OF PHARMACY.

BY H. V. ARNY.

The Chairman of the Scientific Section of the American Pharmaceutical Association made at the New York meeting the following recommendation:

> "That the Association discontinue the Report on the Progress of Pharmacy in the Year Book, but publish same in monthly installments as a part of the JOURNAL of the Association, or in a new journal, and that all abstracts be published within one or two months of the publication date of the original paper. The Year Book of the Association should be continued, but contain only record of the activities of the Association during the year, be prepared by the General Secretary and published and distributed as soon as possible after each annual meeting."

To this proposition the writer submits his vigorous objections, both as a rank-and-file member of the Association and also as its Reporter on the Progress of Pharmacy.

As a member of the A. Ph. A., the writer has fought for the Year Book in its present form since he believes that a bound book containing the Report on the Progress of Pharmacy is what a large majority of our members want. This point seemed settled by the ballot of 1916 (see JOURNAL OF THE A. PH. A., 1917, 184) so at this time it need merely be pointed out that it is the exception rather than the rule for the pharmacist to have loose journals bound and that in many private pharmaceutical libraries in this country the only bound periodicals are our old Proceedings and our Year Books. Fond as the writer is of pharmaceutical periodicals, the old Proceedings and the present Year Books are the only ones of this class having permanent positions on his book-shelves and this is true of hundreds of others in the A. Ph. A. Hence publishing the Report in unbound form will make the Report lose half of its educational value.

Another objection as a member of the A. Ph. A. that the writer has to the proposition is that the publication of the material now in the Report on the Progress of Pharmacy in monthly installments will make the Report a loosely constructed, unscientific jumble of information. It is likely that this statement will be challenged by testimony showing the value of *Chemical Abstracts*, of the abstract pages of the *Journal of the Chemical Society*, and of *Botanical Abstracts*. Just those examples are exactly what is in mind, when making the foregoing statement. Science is classified knowledge and it will take pretty forcible arguments to persuade the writer that really classified knowledge is found in a journal where one has to look in a year's volume (provided it is bound) in a dozen or twenty-four places to find references to a particular subject, let us say pharmacognosy. This perhaps explains why the Society of Chemical Industry is now publishing each year, besides the scattered abstracts in its journal, a classified summary of the chemical work of the year in a single volume.

Another fault of the plan of publishing the Report on the Progress of Pharmacy in monthly installments is the chance of blunders arising from the rush of getting out a journal each month at a specified time. None but those with journalistic experience can realize the wild rush accompanying the getting out of a magazine, even when there is a staff of workers giving its entire time to the work. To

those who know, the wonder is, not that mistakes creep in, but that so few blunders are to be found. But blunders there are and these are due to no reason other than the rush that a definite schedule of publication demands. In the writer's opinion, an abstract publication should be a leisurely affair; a book that it is intended to keep and to study as the years roll on; a compilation of data to which sufficient time has been given to free it as much as possible from the blunders of haste.

All of the objections to the plan of a monthly abstract journal given above are presented by the writer as one of the 3,000 members of the A. Ph. A. As Reporter on the Progress of Pharmacy, the writer has several more objections which he freely discussed at the New York meeting of the Council, but which are scarcely the material to present in printed form. Reduced to its simplest form, the proposal will mean the change from a Reporter who can arrange his time to suit himself (provided that the work is not permitted to lag) to an Editor working on a definite scale, subjected to the rush described above. The change cannot be made except at distinct advance in cost to the Association, an advance cost which, in the writer's opinion, is scarcely justified by advantages obtained.

In conclusion, the Reporter desires to say that he is curious to know how many members of the A. Ph. A. agree with the outspoken opponents of the Year Book in their statements that the present Year Book is of little value to them. As the Reporter is now giving to the Year Book one-quarter of his working time for one-tenth of his total income, he would be the first to demand a stopping of the waste of his time as well as the waste of the funds of the Association should he become convinced that a majority of members of the A. Ph. A. find the Year Book an unnecessary publication.

THE TEACHER AND THE RESEARCH WORKER.

A teacher and an investigator are not always to be found in the same man or woman. No one who teaches can possibly know too much of the subject in his charge, but a different degree of knowledge may suffice for the mere teaching of a topic from that complete mastery which can alone equip the investigator, he who leads us out into new and untrodden fields and adds, by actual discovery or at least by placing things in a truer light, to the sum total of human knowledge. It is no wonder, then, that these two things, the training of teachers and the training of scholars and investigators, should have fallen somewhat apart. On the one hand we are told by some that a teacher had better spend more of his time in learning how to teach than to spend it all in the acquisition of his subject. Elsewhere we find a certain condescension on the part of the men of microscopes and laboratories for "mere teachers" who impart only what they have garnered and do not acquire original or new stores of knowledge.—"The Gownsman" in *Philadelphia Public Ledger*.

SCIENTIFIC SECTION, AMERICAN PHARMACEUTICAL ASSOCIATION.

ABSTRACT OF THE MINUTES OF THE SESSIONS HELD IN NEW YORK CITY, AUGUST 27, 28 AND 29.*

First Session.

The first session of the Scientific Section, A. Ph. A., was called to order by Chairman E. N. Gathercoal, August 27, at 2 P.M. All the officers were present.

The Chairman's address was read following the reading of a paper by W. W. Stockberger on "Commercial Drug Growing in the U. S., in 1918."

First Vice-Chairman C. B. Jordan presided during the presentation of the Chairman's address, entitled:

THE FUTURE OF THE SCIENTIFIC SECTION OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

While the title just read might indicate that something in the nature of prophecy is to follow, such is not the case, for the author hasn't a particle of divine discernment and cannot really see a single moment ahead.

However, he has a real regard for the American Pharmaceutical Association and greatly desires its successful continuance. Nearly all persons become wrapped up in some particular interest, an interest outside of the daily earning of bread and butter—that gives a recreation, a zest to life which adds much to the joy of living. With me such an interest is the A. Ph. A., and I approach the subject named above as one who hopes and works for continual development and improvement, who dreads any retrogression, and who wishes to see our Association always in the front rank of scientific societies.

The fact, also, that pharmacists, and pharmacy as a science, have played so important a part in the medical service of the recent world war increases one's appreciation of the truly ethical and professional character underlying the apparent commercial spirit of pharmacy. Mr. Freericks states that ten thousand pharmacists were in the military or naval service of our country during the war. In Illinois a careful compilation indicates that about 800 pharmacists, out of 6,000 or 7,000 registered, were in the service and three-fourths of these in the medical department of army or navy.

Recently, while in discussion with a well-known officer of the A. Ph. A., this interesting statement was made to me: "If a true amalgamation should be brought about between the A. Ph. A. on the one hand, and the state pharmaceutical associations and the National Association of Retail Druggists on the other,—it would be but a short time before the Scientific Section of the A. Ph. A. would be so engulfed in the predominating commercial spirit of the latter organization that it could find no place for opportunity to hold its meetings at the annual convention—and would be forced into an organization of its own, or compelled to join some other organization such as the American Chemical Society."

This statement so startled me that it has held my attention since then.

As one reviews the activities of the national and local organizations of retail pharmacists, especially within recent years, it is evident that the A. Ph. A. represents the scientific side of pharmacy; the N. A. R. D. is particularly interested in the national legislative and commercial interests of pharmacy; the state associations are especially active along the lines of state legislation, and the local associations look after the local legislative, commercial, and social interests.

In my opinion, it is possible and very desirable to unite all of these organization activities of retail pharmacists under one national head, with the membership embracing a large percentage of the pharmacists of our country. Whether or not such amalgamation occurs, it is certain that retail pharmacy will continue organized and will steadily improve and strengthen its organizations.

The wholesale and manufacturing interests of pharmacy are also well organized and, while the National Wholesale Druggists' Association has never established a scientific section or committee, the American Drug Manufacturers' Association has recently formed a strong committee on standards and deterioration, which committee presented a very able and scientific report at the 1918 meeting of this organization. We understand also, that the latter organization is

*Papers with discussions will, hereafter, be printed apart from the minutes. It is understood, unless otherwise stated, that the papers were referred to the Publication Committee.

fathering advanced work in materia medica, and highly valuable publications may soon be issued under its auspices. It is well known to all of us that the scientific staffs of the great pharmaceutical manufacturing houses constitute one of the strongest supports to scientific pharmacy.

Just at this point, in order to center your attention on the discussion that is to follow, let me present three questions.

1. How can the A. Ph. A. fully maintain, in organized pharmacy of the future, its position as representing scientific pharmaceutical ideals?

2. Cannot the A. Ph. A. in its Scientific Section so direct its activities that it will hold and attract the interest of all persons interested in scientific pharmacy?

3. Is it not possible for the A. Ph. A. to so increase the value and attractiveness of its scientific program as to place the Association on a higher plane among scientific societies than it now holds?

To effectively answer these questions requires more brains than I possess. They have been asked that others might ponder and discuss them. However, a few self-evident facts may help us to get our bearings.

First. Many organizations are competing for all of the real, scientific knowledge produced. If the A. Ph. A. expects to retain its scientific standing, it must be prepared to compete for scientific papers. Apparently the most successful means in this competition are: A large and interested audience to hear and discuss the papers when read; a journal to widely circulate them to a reading public; a means of preserving them for ready reference by future investigators. Frequently, the sole reward for years of painstaking investigation is the publicity the investigator receives.

Second. Scientific investigation requires an increasingly greater outlay of time, money and knowledge. The A. Ph. A. must be in a position to offer facilities, often of an expensive nature, to the investigators in order to draw them to her ranks.

Third. An educated membership is essential to maintain the scientific reputation of an organization. No educated investigator cares to present his results to an unsympathetic, non-appreciative audience. The character of the audience will surely determine, in the long run, the character of the scientific matter put before it. Other scientific organizations have a membership largely, or entirely, of college-bred men and women. The A. Ph. A. must stand for the better education of all entering the practice of pharmacy.

Fourth. A strongly centralized, "one-man" power to lead the organization, especially in times of great need, is very desirable. Our Association could well use, at this time, a leader with high ideals, capable of enlisting in his following a majority of the membership, a good organizer with business acumen, conciliatory yet commanding.

During the preparation of this address, a consideration of the above conditions suggests the following questions: Is the A. Ph. A. increasing its scientific activities and, if so, to what extent? Is this increase proportional to the advance made by pharmacy as a whole, and to that of other scientific organizations?

An examination of the available data discloses the following interesting facts:

In 1892 the membership of the A. Ph. A. was 1380; the membership of 21 state pharmaceutical associations was 9051.[1]

In 1917 (twenty-five years later) the membership of the A. Ph. A. was 2696; of 39 state pharmaceutical associations 22,308;[2] of the National Association of Retail Druggists, 16,000(?).

This numerical comparison would indicate that the influence of scientific ideals as compared with commercial influences is not growing in organized retail pharmacy. It should be borne in mind that the membership of the N. A. R. D. is largely identical with state association membership. On the other hand, the state associations in 1892 included in their meetings, as a rule, scientific programs, while now very few of these associations, possibly four or five, give any consideration to scientific papers.

In 1892 there were 30 colleges or schools of pharmacy in the United States with approxi-

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[1] This includes all the larger associations. Of a few others I could obtain no data. Some of the associations included all the registered pharmacists of the state.

[2] See preceding.

mately 1800 students.[3] There were practically no requirements for entrance, except the fees, and 1200 hours of instruction was considered a long course.

In 1917 there were 69 colleges or schools of pharmacy in the United States with 5952 students[3] and 2043 graduates. At least 46 of these (the Conference Schools) required some high school work for entrance, and 1800 hours of instruction was considered a short course.

While the figures indicate a real advancement in pharmaceutical education, yet one cannot deny that university men hold in low esteem the average pharmacy course and look upon pharmaceutical degrees as of doubtful value.

In 1892, 26 papers were read before the Scientific Section and 37 in 1917. The abstracts in the Proceedings of 1892 numbered 4550, while in the Year Book of 1916 there were 1550.[4] In 1892 the original scientific papers[5] published in American drug journals totaled 205, in 1917, 185.

The establishment of the JOURNAL OF THE A. PH. A. was a great step in advance for the scientific standing of our Association. When one considers that in 1892 the Association published less than 30 papers which represented any original investigation while in 1917 the number of such papers was 70, one can gather some idea of the way in which our Journal is assisting in maintaining our scientific position.

No effort has been made to answer with definite figures the question as to the increase of pharmaceutical, scientific knowledge as compared with that of other scientific lines.

In conclusion, I would suggest that the Scientific Section authorize by resolution a Permanent Secretary of the Section. The by-laws already provide for the permanency of this office and also for a membership roll and other secretarial duties best accomplished by a continuing officer.

Further, that the Scientific Section endorse and recommend to the Council the following:

1. That an accurate, modern index of the 9 volumes of the Proceedings since the fifty-year index, be authorized; and that plans be laid for an index of the Year Book and a decennial index of the JOURNAL.

2. That the Association discontinue the Report of the Progress of Pharmacy in the Year Book, but publish same in monthly installments as a part of the Journal of the Association or in a new journal and that all abstracts be published within one or two months of the publication date of the original paper. The Year Book to be continued, but contain only the record of the activities of the Association during the year, be prepared by the General Secretary and published and distributed as soon as possible after each annual meeting.

3. That the Association either by itself or in collaboration with the United States Pharmacopoeial Convention and possibly other scientific bodies lay plans for substantial assistance to pharmaceutical scientific investigations. This assistance might take the form of a Pharmaceutical Research Institute with a capable Director at its head, through whom financial aid to investigators can be offered, and much be accomplished in the direction, coördination and collaboration of important investigations. Such an institute could very nicely collaborate with a Chemical Research Institute, if desirable.

On motion the address of Chairman E. N. Gathercoal was referred to a committee of three, consisting of F. R. Eldred, W. L. Scoville and E. A. Ruddiman.

The following papers were read and discussed.

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[3] No data could be obtained from a few unimportant schools.

[4] Editor Henry Kraemer, in 1892, included, often by title only, a great many papers that were but distantly related to pharmacy and yet that did add to the completeness of the review of pharmaceutical literature. In 1916, Editor H. V. Arny included only such papers as bore a strong interest to pharmacy. Futhermore, the war markedly decreased the number of scientific papers. Hence the decreased number in 1916 is not necessarily an indication of a decreased interest in scientific literature.

[5] The definition of "scientific paper" has been difficult to frame, but the greatest liberality has been used in this tabulation. The journals examined were the *Druggists Circular*, *Pharmaceutical Era*, *American Journal of Pharmacy* and, in 1892, the *Pharmaceutische Rundschau* and Proceedings of the A. Ph. A., and in 1917 the JOURNAL OF THE A. PH. A.

"A Final Report of the Constituents of Gelsemium," by Lucius E. Sayre and G. N. Watson.

"Urorosein," by J. Atlee Dean.

"The Manufacture of Arsphenamine (Salvarsan) and Neo-Arsphenamine," by H. A. Krumwiede.

Caswell A. Mayo introduced Lieutenants, senior grade, Schaffer and Swiezbick. Mr. Mayo spoke of their services as a credit to pharmacy.

A paper by Isaac F. Harris on "Chloramine Products: Their Manufacture and Use," was read. A motion carried to recommend the inclusion of a formula for standardized Dakin's Solution in the National Formulary.

H. C. Hamilton read a paper on "The Germicidal Value of Mercuric Iodide, Alone and Associated with Soap."

Carl Braubach presented a paper on "Uniformity Necessary in Stating the Phenol Coefficient of Disinfectants." A resolution on the paper was referred to a committee consisting of Messrs. Hamilton, Gershenfeld and McEwen.

Then followed the reading of a paper on "Acid-Insoluble Ash Standards for Crude Drugs" and one on "The Resin of Man Root, Ipomoea Pandurata," the former by C. O. Ewing and Arno Viehoever and the latter by Ernest E. Stanford and C. O. Ewing.

The Chairman announced as members of the Committee on Nominations: George D. Beal, of Illinois; Jeannot Hostmann, of New York; and J. W. Sturmer, of Pennsylvania.

The first session of the Scientific Section was then adjourned.

Second Session.

The second section of the Scientific Section convened August 28, at 9.30 A.M.

Chairman H. C. Hamilton of the committee to pass on the resolution in the paper on "Uniformity Necessary in Stating the Phenol Coefficient of Disinfectants," reported that the author requested that no action be taken at this time, pending a more definite report to be announced at the coming meeting of the American Public Health Association. The request was complied with.

The following papers were read, discussed and referred:

"Preliminary Note on a New Pharmacodynamic Assay Method" (2nd paper), by Paul S. Pittenger.

"Digitalis Standardization by the Cat Method with Some Suggested Modifications," by L. W. Rowe.

"Maintaining Frogs for Testing Purposes," by L. W. Rowe.

"The Biologic Test of Digitalis," by Robert A. Hatcher.

"The Standardization of Blood Coagulants," by H. C. Hamilton.

Report of the Committee on the Chairman's Address.

Chairman W. L. Scoville reported for the Committee on the Chairman's Address:

The first recommendation, that the Scientific Section authorize by resolution a permanent Secretary of the Section, was *not* recommended for adoption by the Committee. The reason for the report was, that there is in the by-laws a provision for making the officer permanent by re-election, if desired; other officers than the secretary, however, can hold office for no more than two succeeding terms.

After a somewhat prolonged discussion, wherein the desirability of a permanent secretary was expressed, the report of the Committee was adopted.

The Committee recommended the adoption of the following, and was sustained by the Section:

That an accurate modern index of the 9 volumes of the Proceedings since the fifty-year index, be authorized and that plans be laid for an index of the Year Book and a decennial index of the Journal.

Chairman Gathercoal recommended,

That the Association discontinue the Report on the Progress of Pharmacy in the Year Book, but publish same in monthly installments as a part of the JOURNAL of the Association or in a new journal, and that all abstracts be published within one or two months of the publication date of the original paper.

The Committee recommended this for adoption with the exception of the fixed time for the publication date of the abstracts of papers, making this read— * * * that all abstracts be published "within as early a period as possible" * * *

The Section concurred in the change made by the Committee and approved the recommendation as amended.

Chairman Gathercoal recommended,

That the Year Book of the Association be continued, but contain only the record of the activities of the Association during the year, to be prepared by the General Secretary, and published and distributed as soon as possible after each annual meeting.

The Committee recommended that this be *not* adopted.

Considerable discussion ensued. The report of the Committee was approved, the understanding of the members being,— that if the Year Book be discontinued the matter of publishing Association records will be provided for, as the Association and Council deem best.

(The Council referred the action taken by the Section anent the Year Book to the incoming Executive Committee of the Council for further consideration, and this Committee is instructed to report to the Council.)

The recommendation,

"That the Association either by itself or in collaboration with the United States Pharmacopoeial Convention and possibly other scientific bodies lay plans for substantial assistance to pharmaceutical scientific investigations. This assistance might take the form of a Pharmaceutical Research Institute with a capable Director at its head, through whom financial aid to investigators can be offered and much can be accomplished in the direction, coördination and collaboration of important investigations. Such an institute could very nicely collaborate with a Chemical Research Institute, if desirable."

Chairman Scoville stated that while the Committee favored the idea, the Committee on Research, A. Ph. A., was just getting under way, and that it was not wise to complicate matters by two different plans. The Committee recommended that this be *not* adopted.

Most of the views expressed were favorable to the proposal, none opposed. The reason assigned by the Committee seemed to meet the approval of the members. Final action of the Section resulted in the adoption of an amendment by Mr. Murray to refer Chairman Gathercoal's suggestion to the Committee on Research, for incorporation with their plans.

The second session of the Scientific Section was then adjourned.

Third Session.

The third session of the Scientific Section was convened August 29, at 9.30 A.M.

The following papers were read, discussed and referred for publication:

"The Permanence of Alkaloidal Fluidextracts and Tinctures," by W. L. Scoville.

"The Identification of Gums by the Phenylhydrazine Test," by C. W. Ballard.

"A Suggested Change in Technique of U. S. P. Assay of Opium," by H. W. Jones.

"The Solubility of Some Volatile Oils in Weak Alcohol," by Horatio C. Wood, Jr.

"A Study of Chenopodium and Its Volatile Oil," by Elmer H. Wirth.

"Analysis of Solution of Magnesium Citrate," by Joseph L. Mayer.

"The 'Shaking-Out' Method for the Quantitative Estimation of Alkaloids, II. Effect of Clarification and 'Salting-Out'," by George D. Beal and Thomas S. Hamilton.

"Observations on *Digitalis Sibirica*," by H. W. Youngken.

Then followed a Symposium on Scientific Phases of U. S. P. Revision.

Introductory Remarks were made by Chairman Charles H. LaWall.

(These and the papers of the Symposium will be printed in a succeeding issue.—Editor.)

The contributors to the Symposium were Henry Kraemer, W. L. Scoville, A. R. L. Dohme and George D. Rosengarten.

Report of the Committee on the Ebert Prize.

Fellow Members:

Your Committee on the Ebert Prize begs to report that the prize is awarded to Arno Viehoever, C. O. Ewing and J. F. Clevenger, for their paper on "Some Commercial Viburnum Barks and Preparations."

The Committee also recommends that hereafter in awarding the Ebert Prize, papers of a scientific character presented before any of the Sections of this Association be considered as eligible for the prize. When the Ebert Prize was established papers on scientific subjects were only presented in the Scientific Section; now we have the Section on Practical Pharmacy and Dispensing; in fact, all papers of a scientific character presented in any of the Sections should be considered in the award. Moreover, Mr. Ebert was primarily interested in the development of practical pharmacy, and we feel that it would be in accordance with his desires that papers relating to that phase be considered in the award.

Mr. Clark called attention to the fact that papers of other Sections had been heretofore considered in the award of the Ebert Prize, and moved to accept the report and endorse the recommendations. Carried.

The following papers were read by title and referred to the Publication Committee:

"Microscopical Method for the Quantitative Determination of Vegetable Adulterants," by Fanchon Hart.

"Unusual Method for Testing the Alcoholic Strength of Pharmaceuticals," by William G. Toplis.

"Lac Fermentatum," by Joseph W. Harrison and Ivor Griffith.

"Laboratory Notes," by Geo. E. E'we.

"An Investigation of the Accuracy of the So-called Dispensing Tablets," by K. F. Ehmann and Jos. W. E. Harrison.

"Oil of Sandalwood," by Azor Thurston.

"The Permanency and Deterioration of Some Vegetable Drugs Twenty-Five Years of Age," by E. N. Gathercoal.

"A Method for Estimating Quinine and Strychnine Occurring in Common Solution," by A. R. Bliss, Jr.

"The Pharmacognosy Laboratory, Its Activities and Aims," by Arno Viehoever.

"Partial Analysis of 330 American Crude Drugs," by C. O. Ewing and J. F. Clevenger.

Chairman Gathercoal stated that the latter paper had particular value in connection with the coming revisions of the U. S. P. and N. F.; that it was a paper of considerable length and had involved in its preparation the expenditure of considerable time and money.

It was moved by H. V. Arny, that the Scientific Section request the Publication Committee to publish this paper and direct it to the attention of the Revision Committees. He did this, because the paper was lengthy and the Publication Committee did not look with favor on long papers, unless of exceptional value. A. H. Clark added to the motion, with the consent of the mover, that other papers appertaining to the revision of the standards be published before the meeting of the Pharmacopoeial Convention. Motion carried.

OFFICERS FOR 1919–1920.

The report of the Committee on Nominations was received. A motion carried to close the nominations and that the ballots be spread. The following were elected: *Chairman*, Jacob Diner, of New York; *First Vice-Chairman*, A. R. Bliss, of Atlanta; *Second Vice-Chairman*, C. W. Ballard, of New York; *Secretary*, A. G. DuMez, of Washington, D. C.

Chairman E. N. Gathercoal spoke briefly, conveying his thanks for the assistance given him during the year and the sessions of the Convention. Chairman Jacob Diner expressed his appreciation of the honor conferred.

There being no further business the Scientific Section was adjourned.

THE RESIN OF MAN-ROOT (*Ipomoea pandurata* (L.) MEYER) WITH NOTES ON TWO OTHER CONVOLVULACEOUS RESINS.

BY ERNEST E. STANFORD AND CLARE OLIN EWING.

Among drugs particularly affected by disturbances of the recent war, particular mention may be made of the purgatives furnished by *Convolvulaceae*. Jalap, a drug of comparatively nearby origin, rose in 1917 to five times its price of the preceding year. Genuine scammony had long before disappeared from the market, though its place had been filled in a measure by the Mexican root, *Ipomoea orizabensis*.

These conditions, naturally, incited considerable interest in available substitutes. The *Convolvulaceae*, consisting of some 1,000 quite closely related species, many of which already have more or less cathartic use, offers a particularly attractive field for medicinal research. The present value of this family, unfortunately, is considerably limited by the tropical habitat of the majority of its members, which are therefore no more accessible than their better-known congeners. Preliminary studies of a physiologically active Convolvulaceous plant, *Piptostegia pisonis* Mart., (1)[1] (3) (15) (16) and of *Resina drastica* (3), an apparently related drug of unknown origin, have recently been reported.

A review of plants of this family occurring within the United States indicated only two whose root appeared to be available in large quantity. One, *Ipomoea pandurata* (L.) Meyer (*Convolvulus panduratus* L.), is a common indigenous plant of the Southern Atlantic and Gulf States. An introduced species, *Ipomoea batatas* Poir., is the common sweet potato. The first named was known to possess purgative properties, but appeared, deservedly or not, to have dropped from medicinal view. The sweet potato appeared unpromising indeed from a medicinal standpoint. While the root has undergone numberless proximate analyses, and the nature and formation of the sugars therein have formed the subject of several researches, nothing to be found in the literature indicated a purgative or resinous constituent. The plant, like its medicinal congeners, possesses a milky juice, which is abundant in the cortex of the root. It often forms a gummy incrustation on the knives used in cutting the root, whose possibilities as a wartime wheat substitute have recently received considerable attention. It seemed at least possible, therefore, if this juice contained even small amounts of purgative principles, that means might be devised for obtaining it on a considerable scale as a by-product of sweet-potato flour manufacture. A preliminary study, sufficient to indicate something of the medicinal and commercial possibilities of the alcoholic extracts of the roots of these plants, was accordingly undertaken.

Some time previously, the root of another species, provisionally identified as *Operculina discoidesperma*, was submitted to this laboratory. A brief note on the resin of this plant is also included here.

THE RESIN OF MAN-ROOT.

Ipomoea pandurata (L.) Meyer, known as man-root, man-in-the-ground, wild sweet potato, wild jalap, and by a host of other local names, is a trailing plant

[1] Reference is made by number to literature cited.

of dry and sandy soil, occurring throughout the eastern half of the United States, especially in the south. The fleshy root is perennial and unusually large, even for a *Convolvulaceous* plant, being, according to King's Dispensatory (4) "from two to eight feet in length, and from two to four or five inches in diameter." The National Standard Dispensatory (6) states "the root sometimes reaches the size of a man's body."

Man-root evidently had some vogue in early American medicine, although literature referring to its properties is very scant. It appears (as *Convolvulus panduratus*) in the supplementary list of the United States Pharmacopoeia II (1842), and III (1851), but is not included in the Fourth Revision (1868). Accounts of its medicinal virtues indicate that the root was usually administered in powder or infusion, no effort being made commercially to prepare from it a resin analogous to those of scammony or jalap. MacLean (10) states " * * * as a cathartic, it has failed * * * given freely in infusion, I have found it to produce more decided diuretic action than any other single article which I have ever used." Planchon and Collin (12), Hartwich (7), King's, the United States, and the National Standard Dispensatories accord it brief mention as a drug allied to jalap. The brief references to the chemistry of the root are evidently drawn from Manz (11) and Kromer (9). King's Dispensatory states regarding the root "it possesses mild cathartic properties * * * the infusion * * * has been effective in dropsy, strangury and calculous affections. It seems also to exert an influence over the lungs, liver, and kidneys * * * It is asserted that the Indians can handle rattlesnakes with impunity after wetting their hands with the milky juice of the root."

Manz (11) extracted the ground root with 90 percent alcohol and treated the extract with animal charcoal. He obtained, after evaporation and repeated reprecipitation from water, 1.5 percent of a resin to which he ascribed griping, hydrogogue cathartic action (in three-grain doses). He further stated it to be glucosidal in nature, soluble in ether, chloroform, and aqueous alkalies, and insoluble in benzol, benzin, and acetic acid. Kromer (9) first extracted the root with water, then with alcohol at 50-60°, purified the alcohol extract by precipitation with basic lead acetate, filtration through animal charcoal, and reprecipitation from alcoholic solution with ether, and thus obtained a resin from which he further separated small amounts of two semi-fluid bodies, soluble, respectively, in ether and petroleum ether. The remaining and larger portion of the resin Kromer considered a homogeneous body, a glucoside which he named ipomoein. He described it as insoluble in ether, petroleum ether, benzol, and chloroform; easily soluble in alcohol and acetic acid; difficultly soluble in cold, but readily in hot, methyl alcohol and acetone. Its melting point was 170° and its optical rotation —32.62°. Kromer does not report the yield nor did he, apparently, test its physiological properties. The chemical value of Kromer's rather extensive research seemed somewhat doubtful, in view of the fact that the various Convolvulaceous resins examined by Power and Rogerson (including that of scammony to which Kromer (8) had also attributed homogeneous character) have been shown by these writers to be very complex.

The dried root used in the present study was obtained by the writers during a brief survey of the drug-collecting centers of the Southern Appalachians, an

account of which has previously been given in THIS JOURNAL (2). The sample (Fig. 1) was obtained from a wholesale warehouse; its history and season of col-

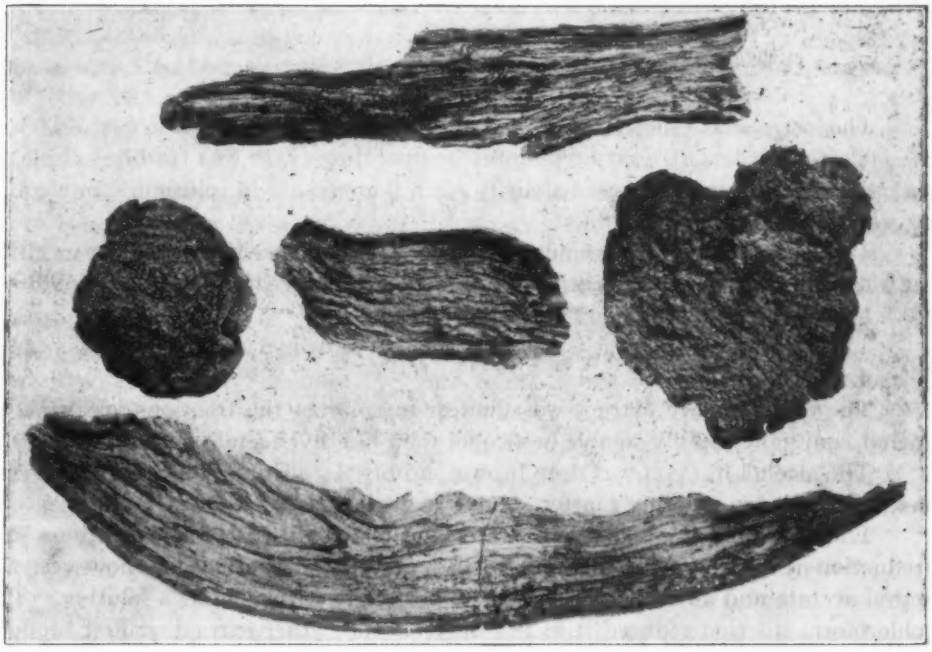

Fig. 1.—Commercial Specimen of Man-root, × 1/2.

lection are unknown. It consisted of longitudinal and transverse pieces, the former predominating. The specimens varied in color from light to dark brown, with occasional dark resinous extrusions. Annular markings were more or less evident, especially in longitudinal portions. The pieces ranged up to about 6 cm. in diameter, and about 20 Cm. in length. The taste of the root was weakly bitter. The powder was light brown. The product bore a considerable resemblance to *Piptostegia* root, although the annular markings were less plain.

A dark brown, rather gummy and somewhat hygroscopic resin was prepared from the ground root by percolation with 95 percent alcohol and precipitation and washing with water, in the manner prescribed by the United States Pharmacopoeia for jalap resin. The yield was 4.65 percent. The resin, after long-continued drying, could be ground to a light powder. Its odor somewhat resembled that of other Convolvulaceous resins, particularly *Orizaba* resin. It was sweet and fruity, with a suggestion of stewed prunes. The optical index of the crude resin, after decolorization with animal charcoal, was —30.24° at 24° C. This figure[2] is not far from that obtained by Kromer (—32.62°), in his work on man-root.

[2] Guigues (5), who brought forward the value of the optical index in the differentiation of Convolvulaceous resins, reports an index of —20° 10′ to —31° 35′ for the resin of turpeth root (*Operculina turpethum* Pet.). Obviously the optical indices alone would not serve to differentiate this resin from that of man-root.

By successive extractions with various solvents the following fractions were obtained:

Petroleum ether (b. p. 55–75°)	11.66%
Ether (anhydrous)	17.53%
Chloroform	23.25%
Ethyl acetate	41.59%
Alcohol	6.27%

The petroleum ether fraction was a dark, waxy mass, hygroscopic, and impossible to powder, at least at ordinary temperatures. It was readily soluble in petroleum ether, and displayed a slight green fluorescence in solution. In alcohol it was rather difficultly soluble.

The ether fraction was similar in color. It dissolved rather slowly in ether and alcohol, and was fluorescent in solution. On prolonged desiccation it solidified to a hard, brown, hygroscopic, varnish-like resin.

The chloroform fraction was a brittle, light brown resin, rather slowly soluble in chloroform and alcohol.

The ethyl acetate extract was lightest in color of the fractions, easily powdered, and more rapidly soluble in alcohol than in ethyl acetate.

The alcohol fraction was deep brown and brittle. Unlike the others, it carried a trace of brown coloring matter soluble in water.

Each fraction was boiled with water and tested with Fehling's solution. No reduction resulted. After heating with 5 percent sulphuric acid, however, the ethyl acetate and alcohol fractions reacted strongly with Fehling's solution. The chloroform fraction reduced it in less degree. The ether extract at first brought forth no reaction, but after standing some time a precipitate of copper oxide slowly developed. The petroleum ether extract gave negative results.

The process of Kromer (9) previously referred to appeared to yield a less complex product, yet, judging from the work of Power and Rogerson on other convolvulaceous products, and the above results, it seemed improbable that his "ipomoein" could have represented a pure glucoside. To test this supposition 2 grammes of the crude resin were dissolved in alcohol, the solution allowed to stand several days with an excess of basic lead acetate, after which the excess of lead was removed from the filtered solution with H_2S. After treatment with animal charcoal the colorless solution was filtered and evaporated. 0.7293 Gm. (36.46 percent of the original weight) remained. This was fractionally extracted, with the following results:

Petroleum ether (b. p. 55–75°)	(accidentally lost)
Ether (anhydrous)	17.14%
Chloroform	16.08%
Ethyl acetate	44.15%
Alcohol	14.26%

The fractional percentages obtained by this method, it will be readily seen, do not differ greatly from those derived from the crude resin.

To test the physiological action of the crude resin the material was administered in half-gramme dose to two adults. In one case only a mild catharsis followed; in the other the results were a trifle more severe; some griping was caused, and the action obtained resembled in kind that of jalap resin, but was much milder in

degree than would be expected from a medicinal dose ($^1/_8$ Gm.) of the latter. Separate tests of the chloroform, ethyl acetate, and alcohol fractions in amounts somewhat greater than represented in $^1/_2$ Gm. crude resin ($^1/_4$ Gm. of the chloroform and ethyl acetate extracts and $^1/^2$ Gm. of the alcohol) indicated the ethyl acetate extract to possess the most activity, although the results in no case approximated that of the crude resin. The chloroform and alcohol fractions exerted no action beyond a mild sense of internal discomfort.

No dogs were available for pharmacological tests. Both the crude resin and all fractions save the petroleum were administered to several cats in amounts up to 1 Gm. each. In no case was any cathartic action noted. In view of this negative result, and inasmuch as no information was available as to the reaction of the cat to this type of purgative, it seemed advisable to make a comparative test of several other related resins. The cats at first refused to consume meat containing the more drastic products, but the addition of a small amount of ground catnip to the mixture obviated the difficulty. One-half gramme of *Piptostegia* resin, $^1/_2$ Gm. of jalap resin, and 1 Gm. of orizaba resin, were required to induce marked cathartic effect. 1 Gm. of jalap resin induced emesis. These results indicated that cats are less susceptible to the action of convolvulaceous resins than are human subjects, and also that man-root resin, and the fractions previously described, are considerably lower in cathartic power than the related substances ordinarily used in medicine.

When our survey was made (summer of 1918) collectors were offered $2^1/_2$ cents per pound for the dried root, which appeared not to be in much demand. When no demand exists for a drug, dealers in the collecting districts, instead of dropping the commodity, frequently continue to list it at a low nominal price, insufficient to encourage collections. Had there been a demand, the price would no doubt have been materially higher. At the low price quoted, and at a yield such as obtained in the present instance, the resin could compete in price with the resins of jalap or true scammony, although not with that of Orizaba, which root is now chiefly obtained under the designation "Mexican Scammony," at a price around 6 cents per pound. In view of the weak medicinal action of man-root resin, and the mechanical difficulties entailed by its hygroscopic nature, it appears, however, not to exert a very strong claim for notice, notwithstanding the present apparent low price of the crude root and the present conditions of scarcity of true scammony and jalap resins.

THE RESIN OF THE SWEET POTATO.

The material used in this work was obtained by courtesy of Mr. H. C. Gore, of the Fruit and Vegetable Utilization Laboratory, Bureau of Chemistry. It had been dried in small pieces at a low temperature, by a process devised in that laboratory. The ground product was percolated in the same manner as the man-root. Upon evaporation of the alcohol a syrupy, dark brown extract resulted. Upon attempt to wash it, it formed a persistent, milky emulsion from which, on several days' standing, only a small amount of syrupy matter separated. The material was then distilled with steam. A very small quantity of oily matter (0.0023 percent of the dried potato) was obtained, from which, upon standing, acicular crystals deposited. Its odor was suggestive of butyric acid.

The residue was evaporated to dryness and extracted with hot absolute alcohol. After evaporation of the alcohol, the extract was repeatedly washed with small amounts of hot water until an emulsion ceased to form. The dried residue was a dark brown, viscous, syrupy mass, quite hygroscopic, which long continued drying at 105° failed to reduce to a pulverizable condition.

The mass amounted to 0.56 percent of the weight of the dried root. Its odor was faintly sweet, resembling that of the dried root. Its optical index after treatment with animal charcoal was —8.07°, an unusually low figure for a convolvulaceous resin. With various solvents the following fractions were obtained:

Petroleum ether (b. p. 55–75°)	82.9%
Ether (anhydrous)	9.3%
Chloroform	3.6%
Alcohol	4.7%

The petroleum fraction was a soft hygroscopic, reddish brown mass much resembling the material extracted. The remaining fractions were similarly colored, but somewhat harder. All save the alcohol extract rapidly became gummy on exposure to the air. Upon boiling with water they did not react with Fehling's solution. After hydrolysis with dilute acid the last three yielded a reducing substance. The reaction was most marked in case of the ether extract. This indicated the presence, in extremely small amounts, of glucosidal constituents in the root of *Ipomoea batatas*.

In its high percentage of petroleum-soluble material as well as in its lack of cathartic properties, this product resembles the extract of *Ipomoea horsfallii* Hooker, as reported by Power and Rogerson (13). It is of course not impossible that the portions insoluble in petroleum ether (in which the purgative properties of Convolvulaceous resins usually reside) may have possessed activity, but the small amounts obtained from the material in hand were insufficient for an adequate test.

THE RESIN OF YELLOW MORNING GLORY.

The root of this plant was received from Mr. W. E. Safford, of the Office of Economic and Systematic Botany, Bureau of Plant Industry. Mr. Safford states in a private communication that the plant is native to Mexico and Central America. The root in question came from San Antonio (Texas) Experimental Farm, where it has been introduced as an ornamental. From the characters of its flowers and leaves it has been provisionally referred to as *Operculina discoidesperma* (Donn. Sm.) House (Syn. *Ipomoea discoidesperma* Donn. Sm.), but owing to its failure to form seed it cannot yet be identified with certainty. The portion examined consisted of a slender rootstock about 20 cm. long and 2 cm. in diameter. An extract was made by the usual method for jalap resin (U. S. P. IX). The root yielded 6.5 percent of a waxy, hygroscopic resin much resembling that of man-root. Like the latter, also, it possessed a sweet, fruity aroma. The chemical characteristics of this product were not investigated. A limited test of the physiological properties failed to demonstrate any cathartic action.

SUMMARY.

Resins (alcoholic extracts) of Man-root (*Ipomoea pandurata* (L.) Meyer), sweet potato (*Ipomoea batatas* Poir.) and yellow morning glory (*Operculina discoidesperma* (Donn. Sm.)) House, were prepared.

Fractional extractions of the extracts of man-root and sweet potato with several organic solvents showed them, like other Convolvulaceous resins, to be of complex composition, and partly of glucosidal nature.

A limited number of tests of all the resins showed only the man-root resin to possess marked physiological activity. This resin proved a mild cathartic. Although the yield (4.65 percent) is rather higher than that previously reported, this product because of its mild action and hygroscopic nature appears unlikely to attain commercial or medicinal importance as a competitor of scammony, jalap or orizaba resin.

PHARMACOGNOSY LABORATORY,
BUREAU OF CHEMISTRY.

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THE MANUFACTURE OF ARSPHENAMINE (SALVARSAN) AND NEO-ARSPHENAMINE (NEO-SALVARSAN).*

BY H. A. KRUMWIEDE.

INTRODUCTION.

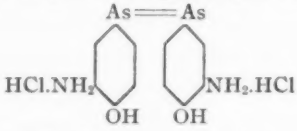
Salvarsan or Arsphenamine, as the Federal Trade Commission has named the drug, is now being successfully manufactured in this country. Previous to the war, it was made in Germany under Ehrlich's supervision, but since the taking over of all alien-enemy patents, there are at least three firms, besides several Health Departments, making it in the United States, and several more are making application for the license to manufacture it.

* Read before Scientific Section A. Ph. A., New York Meeting, 1919.

Arsphenamine is also called by other names according to the firm making it, as for example—arsenobenzol, diarsenol, kharsivan, hydrosan, and arsaminol.

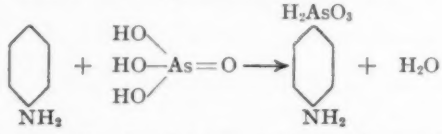
METHOD OF MANUFACTURE.

Arsphenamine is the dihydrochloride of diamino-dioxy-arsenobenzene and its successful preparation has required long and painstaking research.



Of the various possible methods of manufacture, the one most favored is the so-called oxalic method; while it may seem long on paper, it is simpler than some of the others and is now being used by several firms.

The initial step is the formation of para-arsanilic acid by the combination of aniline oil and arsenic acid at a temperature around 180° C.

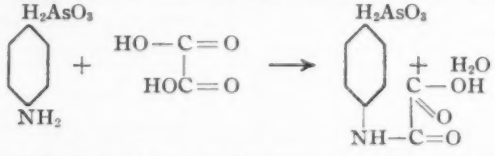


The fusion mixture is dissolved in caustic and is precipitated out by means of acid.

The sodium salt of *p*-arsanilic acid is the "atoxyl" of commerce, and was first made in 1863 by Bechamp. It was also used as a remedy for sleeping sickness and syphilis but the uncertainty of results, with the possibility of blindness, has caused it to be used with caution.

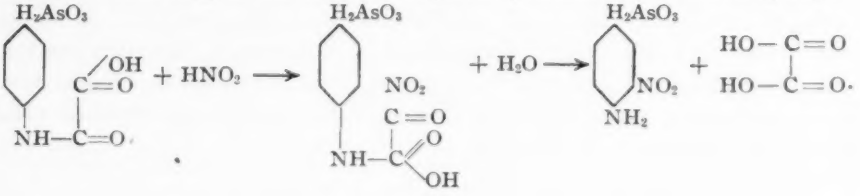
This seemingly simple process is the most difficult one of all the various steps that follow it, because on it depends not only the purity of the final product, but the percentage yield has to be sufficiently large to make it commercially practical.

A nitro- or NO_2 group has to be next attached to the benzene ring, but before this can be done, the amino- or NH_2 group has to be fixed by an oxalic acid group.



This is accomplished by heating the arsanilic acid with oxalic acid until the mixture is perfectly dry, which requires several hours of baking at a moderately high temperature.

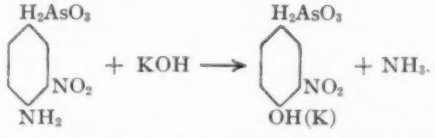
So the third step is the nitration process by means of which the NO_2 group joins the benzene ring in the ortho or adjacent position to the amino group.



To do this the oxalic acid derivative or oxanil-arsenic acid is dissolved in sulphuric acid and a molecule of nitric acid added at low temperature. By diluting and cooking with water, the oxalic acid is again split off, and the nitro-arsanilic is thrown down as a yellow crystalline mass.

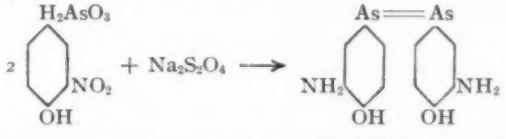
The three subsequent changes while they are very important do not materially alter the general structure of the substance as we finally have it, and the skeleton framework of Arsphenamine is now practically completed.

The three steps are as follows:



The amino group is saponified by means of a strong caustic solution to an OH or phenol group with the natural loss of ammonia. The purified nitrophenol-arsenic acid has only a pale yellow color.

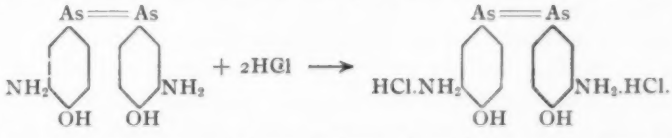
By treating this with sodium hydrosulphite, the nitro group is reduced,



likewise the pentavalent form of arsenic is reduced to a trivalent form, which is very important, as the trivalent form is more valuable therapeutically than the pentavalent variety; this eliminates most of oxygen from the molecule, thus causing two arsenic atoms to unite, which gives us the substance known as Arsphenamine Base, which is the active portion in any of the allied preparations found on the market.

As the base is very insoluble in water, and in order to change it into a form whereby it can be more easily handled clinically, it is necessary to change it into a dihydrochloride. According to the Ehrlich method, the base is dissolved in anhydrous methyl alcohol and hydrochloric acid, and re-precipitated from a large volume of ether. In view of the fact that both the alcohol and ether used are anhydrous, there is no justification for the general assumption, that the Arsphenamine contains two molecules of water of crystallization.

By the Kober method, the base is dissolved in caustic and reprecipitated with an excess of hydrochloric acid with rapid stirring and at a low temperature.

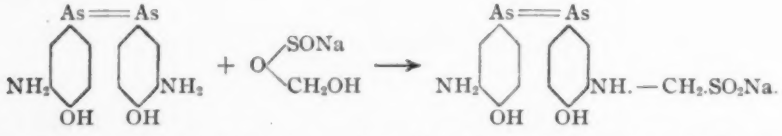


A yellow-white, curdy precipitate is formed, which rapidly turns to a greenish yellow gum, if left exposed to the air, but if filtered and dried under anaerobic conditions, a light yellow powder is obtained which is the product you see in the ampoules—Arsphenamine.

Too much stress cannot be laid on the importance of having the filtering and drying done with the exclusion of air or in an atmosphere of some inert gas, such

as nitrogen or hydrogen, as otherwise the product undergoes rapid oxidation, turning dark brown in color, forming, according to Ehrlich, a substance known as oxyphenyl-arsenic oxide, which is many times more toxic than Arsphenamine.

Neo-Arsphenamine is the sodium salt of diamino-dioxy-arsenobenzene-methanal sulphoxylate, and is made by adding to a solution of Arsphenamine an aqueous solution of formaldehyde sulphoxylate (which is made by combining formaldehyde with sodium hydrosulphite); a precipitate is formed which is called the Neo-Base; this is dissolved in sodium carbonate solution and re-precipitated by the alcohol method.



A modified method has been developed in this laboratory by which the alcohol has been eliminated, which method will be published at a later date elsewhere.

One big advantage Neo-Arsphenamine has over Arsphenamine is, that it is less toxic and can, therefore, be administered in large doses. It is also more soluble in water, forming a neutral solution; but to offset these advantages it is less stable and is oxidized by air even more rapidly than the Arsphenamine.

In testing either of these drugs for decomposition, the best way is to see if the ampoule is air-tight, or if the ampoule had been partially evacuated when it was filled; if such is the case we can readily assume the product is in good condition.

PROPERTIES.

Arsphenamine and the Neo-derivative are both somewhat similar in color, the Arsphenamine being a pale yellow while the Neo is more of an orange-yellow shade.

Chemically, they can be readily distinguished from one another by simple tests, as for example their behavior toward 36% acetic acid, which with Neo-Arsphenamine gives an orange-yellow precipitate on heating, while the Arsphenamine gives none at all; or again, the diazotation of Arsphenamine yields a greenish yellow fluorescent compound, while Neo-Arsphenamine gives a brown solution.

The color of Arsphenamine is no criterion of its toxicity, as some light colored preparations were very toxic and others darker in shade were comparatively non-toxic.

According to some recent investigators, the variations of the toxicity in the drug are largely due to the fact that methyl alcohol and ether are used in the Ehrlich method of precipitating the dihydrochloride, in the final step of the preparation, and due to this fact the methyl alcohol is either occluded in the molecule or the product has been methylated, with the alcohol and ether bound chemically as an ester or ether. In the method used, modified by Kober, no alcohol or ether are employed, thus eliminating that toxicity factor.

It has been found that despite careful methods of manufacture, there is a possibility that variable amounts of arsenic, in an inorganic form, will be present, although theoretically all the arsenic should exist in the organic form only; and to complicate matters still further, various organic arsenic combinations with a higher toxicity than Arsphenamine enter into the final composition.

As these combinations cannot be analyzed chemically, you can readily see how highly essential it is that before this drug can be placed on the market its toxicity has to be determined by means of biological assays, using rabbits, guinea pigs or rats.

The arsenic content of the various Arsphenamine preparations on the market averages around thirty percent, which is the standard set by the Hygienic Laboratory of the United States Public Health Service, while the arsenic content in the Neo-derivative should average around nineteen percent.

The present biological standard set by the same Laboratory, for the Maximum Tolerated Dose, is 100 milligrammes per kilo-body-weight of animal for Arsphenamine; it is 200 milligrammes per kilo-body-weight for Neo-Arsphenamine.

The dose for Arsphenamine usually given to adults is from 0.4 to 0.6 gramme, while from 0.6–0.75 gramme is the usual dose for Neo-Arsphenamine.

RESEARCH LABORATORY,
E. R. SQUIBB & SONS.

THE PERMANENCE OF ALKALOIDAL FLUIDEXTRACTS AND TINCTURES.*

(SECOND PAPER.)

BY WILBUR L. SCOVILLE.

Nine years ago, at the Richmond meeting, I reported, under the above title, upon the keeping qualities of some fifty alkaloidal fluidextracts and tinctures over a period of two to three years. The remaining portions of those preparations were set aside in a closed case having glass doors where they have been stored during the intervening time. The preparations are now ten to twelve or more years old, and have been stored during that period under conditions which simulate the ordinary storage of business, namely, in partially filled bottles, in a fairly even temperature, and in a diffused light. They were each assayed by the same method as used ten years ago, and the results are shown in the following table.

The column headed "standard" shows the strength (grammes per 100 mils) to which the preparations were adjusted by assay when made.

TABLE OF RESULTS.

Abbreviations in tabular matter: F.—fluidextract; T.—tincture. Under "physical condition," the extent and character of the precipitate are indicated as follows: Slight precipitate—s; very slight—v. s.; moderate—m.; dense—d.; heavy—h.; considerable—c.; gelatinous—g.; wholly gelatinized—w. g. For fluidextracts of cinchona, guarana, ipecac and kola see also statements indicated by key number to foot-notes. Abbreviated references to preparations without precipitates are: O—clear; N—nearly clear; A—acetic.—EDITOR.

Made.	Percent alcohol.	Preparation.	Standard.	Assay 1910.	Assay 1919.	Percent loss.	Physical condition.
7–'07	40	F. Aconite lf.....	0.40	0.50	0.44	00.0	s.
1–'08	65	F. Aconite rt.....	0.40	0.43	0.407	00.0	N
1–'07	63	T. Aconite rt.....	0.050	0.051	0.0486	3.0	s.
10–'07	75	F. Anhalonium.....	5.50	6.48	5.6	00.0	v.s.
7–'08	50	F. Aspidosperma.....	1.00	1.04	0.53	47.0	h.
3–'08	60	F. Belladonna lf.....	0.30	0.297	0.277	8.0	m.

* Read before Scientific Section, A. Ph. A., New York Meeting, 1919.

TABLE OF RESULTS.—(*Continued*).

Made.	Percent alcohol.	Preparation.	Standard.	Assay. 1910.	Assay. 1919.	Percent loss.	Physical condition.
9–'08	65	F. Belladonna rt	0.40	0.383	0.385	4.0	m.
2–'08	48	T. Belladonna lf	0.030	0.028	0.028	7.0	s.
5–'07	58	F. Cinchona Cal	4.00	2.85	2.20	44.0	c.[1]
8–'07	56	F. Cinchona Pale	3.00	2.72	2.56	15.0	m.
11–'07	56	F. Cinchona Red	5.00	4.75	4.60	8.0	s.
4–'08	53	F. Cinchona Comp	3.00	3.00	3.02	0.0	s.
2–'07	63	T. Cinchona Cal	0.75	0.63	0.56	25.0	h.
4–'08	64	T. Cinchona Comp	0.60	0.61	0.59	1.0	c.
8–'08	38	F. Coca	0.50	0.49	0.15	70.0	h.
5–'07	25	F. Coca misc	0.50	0.47	0.26	48.0	h.
12–'07	55	F. Colchicum corm	0.35	0.31	0.24	30.0	v. s.
3–'08	55	F. Colchicum seed	0.40	0.30	0.26	35.0	v. s.
2–'08	56	T. Colchicum seed	0.040	0.050	0.037	8.0	v. s.
8–'07	40	F. Conium	0.45	0.27	0.049	90.0	c.
12–'07	55	F. Gelsemium	0.50	0.42	0.49	2.0	O
5–'08	55	F. Gelsemium fresh	0.25	0.23	0.25	0.0	c.
3–'08	60	T. Gelsemium	0.05	0.041	0.038	24.0	s.
5–'08	60	F. Guarana	3.50	3.68	1.45	59.0	h[2].
8–'08	47	F. Hydrastis	2.00	2.06	1.86	7.0	s.
3–'08	60	T. Hydrastis	0.40	0.344	0.288	28.0	m.
12–'07	55	F. Hyoscyamus	0.075	0.073	0.0074	2.0	m. h.
6–'08	46	T. Hyoscyamus	0.0075	0.0072	♂.0074	2.0	s.
10–'08	68	F. Ignatia	1.50	1.45	1.46	3.0	s.
2–'08	57	F. Ipecac Cart	1.75	1.78	1.39	20.0	g.[3]
1–'08	57	F. Ipecac Rio	1.75	1.70	1.40	20.0	g.[4]
	28	F. Kola N. F	1.00	0.92	0.93	7.0	c.
8–'08	52	F. Kola fresh	0.65	0.70	0.00	100.0	w. g.[5]
8–'08	60	F. Nux Vomica	1.00	0.976	1.002	0.0	v. s.
6–'08	68	T. Nux Vomica	0.10	0.098	0.100	0.0	v. s.
6–'08	45	T. Opium	1.25	1.25	1.034	17.0	c.
4–'08	22	T. Opium deod	1.25	1.25	1.115	8.0	c.
11–'08	32	F. Opium Comp	4.82	4.58	4.06	16.0	m.
11–'07	88	F. Physostigma	0.15	0.157	0.138	8.0	s.
5–'08	92	T. Physostigma	0.014	0.016	0.016	0.0	v. s.
6–'08	43	F. Pilocarpus	0.40	0.33	0.35	12.5	s.
3–'08	Acet	F. Sanguinaria A	2.50	0.57	0.17	96	c.
2–'09	60	F. Sanguinaria	2.50	1.63	0.56	78	h.
3–'08	56	T. Sanguinaria	0.25	0.092	0.090	64	c.
11–'06	68	F. Scopola	0.50	0.505	0.51	0.0	s.
8–'07	52	F. Stramonium lf	0.25	0.27	0.236	6.0	m.
3–'07	63	F. Stramonium seed	0.35	0.326	0.34	3.0	m.
2–'08	48	T. Stramonium	0.025	0.025	0.018	28.0	s.
1–'08	85	F. Veratrum	1.00	0.70	0.60	40	O
4–'08	93	T. Veratrum	0.10	0.070	0.062	38	O

A study of this table discloses that there are two main reasons for deterioration in these preparations: (1) the unstable character of some of the alkaloids, and (2) precipitation of secondary constituents by which alkaloids are taken out of the solution.

Loss through the instability of the alkaloid is shown particularly in the fluid-

[1] One and one-half inch precipitate. [2] 102 grammes moist precipitate. [3] 1/8 inch gelatinous precipitate. [4] 1/8 inch gelatinous precipitate. [5] Wholly gelatinous.

extracts of colchicum corm and colchicum seed. Both of these have lost more than a third of their strength, yet they remain nearly clear. The tincture shows much less loss, and contains a marked precipitate.

The fluidextract and tincture of veratrum show a loss of 40 percent, but are clear and, so far as physical appearance shows, are in excellent condition. Probably the deterioration in this is due entirely to partial decomposition of the alkaloids.

Sanguinaria shows the greatest loss of any of the preparations, the acetic fluidextract, which was formerly official, being almost inert. The sanguinaria alkaloids are easily changed, and in assaying the aged preparations it was evident from the appearance of the acid solutions that sanguinarine was present only in small amounts, if at all, since the blood-red color of acid solutions was lacking. The solution obtained from the acetic fluidextract had a yellow coloring in which no red was observed, while that from the alcoholic fluidextracts and tincture showed only a light orange color. This alone indicated a decomposition of the alkaloids, since in fresh preparations the color is a deep blood red, and the extraction of the alkaloid by acid can be closely followed by the color of the solutions. Precipitation is heavy in these preparations and may also be a factor in deterioration.

With coca and pilocarpus, decomposition of the alkaloid is doubtless the main factor in loss, but precipitation is also a secondary cause. Preparations of both of these precipitate badly.

It is especially noticeable, however, that the mydriatic alkaloids, which are generally regarded as unstable, show no serious losses on aging. Of all the preparations of belladonna, hyoscyamus, scopola and stramonium, the only one showing a loss of more than 8 percent is tincture of stramonium. Hyoscyamus preparations show only 2 percent loss, though previous reports by other invesigators have shown much greater losses.

Why the tincture of stramonium should undergo a deterioration of 28 percent is a puzzle. It shows less precipitate than some of the other stramonium and belladonna preparations, and it contains the same amount of alcohol as tincture of belladonna, which shows only 7 percent loss. Taken as a whole, the mydriatic preparations show an unexpected degree of stability.

Physostigma preparations are also stable to a surprising degree. Perhaps the alcoholic strength is a factor in this.

The aconite preparations also show no appreciable loss. Chemical assay in this instance is not conclusive, since the decomposition products of aconitine have a lower molecular weight and consequently show a higher titration value, and one is not certain in titration how much is aconitine and how much is aconine. But a comparison of the results by weight and by titration indicate that aconitine formed the greater portion of the alkaloid.

Among the preparations which show a loss in strength caused by the mechanical absorption of the alkaloids by the precipitate which is formed, those which contain tannoid bodies are conspicuous. Such are aspidosperma, cinchona, coca, kola, and guarana. The tannins in these drugs appear to oxidize easily and become insoluble, and in precipitating they carry down the alkaloids.

It is noticeable that in preparations of these drugs, loss in strength is appar-

ently proportional to the amount of precipitate. When there is no precipitate, there is no loss in strength, and when the precipitate is heavy the loss in the fluid is considerable.

That the precipitate carries down the alkaloid mechanically was shown in 1910 in the case of a fluidextract of cinchona which had dropped from 4 percent of ether-soluble alkaloids to 3.3 percent and which contained 75 grammes of moist precipitate containing 4.84 percent of ether-soluble alkaloids.

The case of fluidextract of guarana, which assayed 3.5 percent of caffeine in 1908 and 3.68 percent in 1910, when precipitation had begun, yielded only 1.45 percent in 1919; but it contained 102 grammes of dense, leather-like precipitate which could not be removed from the bottle without breaking the latter. This precipitate assayed 6.88 percent of caffeine. Apparently the first portions of precipitate did not occlude the alkaloid, but as it increased, alkaloid was absorbed from the liquid.

A similar case is shown in fluidextract of fresh kola, which showed only a slight precipitate in 1910 and tested 108 percent of standard, but had wholly gelatinized in 1919. Unfortunately this gelatinous mass was thrown away without assay.

Both samples of fluidextract of ipecac show a loss of 20 percent and contain considerable caked precipitate. Since ipecac does not contain tannin this precipitate is of a different character, but presumably it contains some of the alkaloids.

With opium the precipitate is of a resinous character, as shown by its partial solubility in 95 percent alcohol. It was found to contain morphine, but not in sufficient amount to account for the loss in the tinctures.

In general, the presence of a considerable quantity of precipitate in a fluidextract or tincture may be taken as an evidence of deterioration in strength. Evidently the precipitate does not consist of inert matter, as has frequently been taught, but contains more than its proportionate share of active principles, even when these are freely soluble in themenstruum. A slight or very moderate amount of precipitate does not necessarily indicate deterioration, as shown in the case of belladonna, hyoscyamus, and stramonium (fluidextract), but on the other hand even a clear fluid may have deteriorated, as shown by veratrum and colchicum preparations.

It is also interesting to note that tinctures show, in the cases of aconite, belladonna, and compound cinchona, slightly more, and in cinchona calisaya, gelsemium, hydrastis, and stramonium considerably more deterioration than the corresponding fluidextracts.

The influence of alcoholic strength is not so clear, from the table. With the exception of the opium, coca and kola preparations, all contained above 45 percent of alcohol. It is to be remembered that the tendency of late years has been to increase the strength of drug menstrua to prevent precipitation. This seems a wise tendency in so far as it effects this purpose, because not only the solubility of the alkaloids but the influence of other constituents of the drug, which may in themselves be inert, is important. The question of the strength of alcohol needed to extract the active principles and prevent fermentation changes, which is now being argued, is not sufficient if we are to have reliable preparations. The influence

of alcohol in excluding inert but instable constituents, in preventing oxidation, or in otherwise maintaining solution, is of prime importance. Stability and reliability in galenical and pharmaceutical preparations are of more importance than alcoholic restrictions.

As a whole, the preparations of our active potent drugs show a very satisfactory degree of stability during a considerable period.

LABORATORY OF
PARKE, DAVIS & COMPANY,
1919.

AN UNUSUAL METHOD FOR TESTING THE ALCOHOLIC STRENGTH OF PHARMACEUTICALS.*

BY WILLIAM G. TOPLIS.

On page 115 of the February 1919 issue of the *American Journal of Pharmacy* will be found a contribution by two Hindu gentlemen[1] connected with the Hindu University Chemical Laboratory at Benares, India, entitled, "A Simple and Rapid Method for the Estimation of Alcohol in Spirituous Liquors."

This is an example of widely separated minds operating along similar lines, each quite unknown to the other. The writer had occasion to visit Prof. C. H. LaWall some time before this article appeared in print, and one of the topics of discussion was this very subject.

The following is quoted from their paper to explain the method: "The method for the estimation of alcohol described below is the result of an investigation to devise a simple method for its estimation with a fair degree of accuracy, avoiding distillation."

The method consists of treating a known quantity of spirituous liquor, in a glass tube, graduated in tenths of a cubic centimeter, or finer, with an excess of anhydrous potassium carbonate, adding five to ten percent of water in case the alcohol is above ninety percent. The mixture is then thoroughly shaken and allowed to settle (or preferably centrifuged) when it will separate into a lower layer of solid potassium carbonate, a middle layer of solution (saturated) of potassium carbonate, and an upper layer of alcohol hydrate corresponding with the formula $4C_2H_5OH\text{-}H_2O$. The authors here set forth the evidence of the truth of their statements, and the method by which it was secured. They have treated the subject with great care and show that the method is dependable and gives precise results. To the purely chemical investigator thus far ends the chapter. To the pharmaceutical observer there appears a further usefulness. Employing a similar method with different agents it is possible to determine with useful accuracy, not alone the alcohol in a preparation but certain substances soluble in dilute alcohol that are insoluble in concentrated alcohol or saturated solution of a salt; for example, essence of pepsin or wine of pepsin may be made to disclose, in addition to the alcohol, the pepsin content as well, by placing a known quantity of either preparation in a test tube and simply saturating the liquid with potassium citrate (previously dried); immediately the alcoholic part will rise to form the

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* Read before Scientific Section, A. Ph. A., New York Meeting, 1919.

[1] Magendra Chandra Nag and Panna Lal.

top layer, the pepsin will be salted out of the water solution, rise to form the middle layer, and the solution of potassium citrate will subside; a graduated tube will give the parts of each ingredient near to the truth. The writer has found that 50 percent alcoholic liquids respond promptly to the test. Since pepsin preparations are much lower in alcohol than this it is good practice to add alcohol in known quantity to the test, to insure the best result, making proper correction of course for the added spirit. Again, this test may be made to disclose in whisky not alone the alcoholic content but a factitious spirit, and the amount of caramel that has been used in coloring it. Simply proceed as before; a measured quantity of the suspected liquid is saturated in a graduated tube, with the dried potassium citrate; the alcohol rises at once; the caramel, insoluble in strong alcohol, separates from both it and the saturated water solution and assumes the middle portion between them. If this tube be corked and set aside for some days the caramel may be removed in one piece and weighed.

Strong mixtures of alcohol and water separate most readily under this method, though a 10 percent alcohol (and 90 of water) responds. So far the writer has not succeeded in separating the alcohol from five percent beer by this method. Such determinations must be assisted by the addition of known amounts of alcohol.

The specific gravity of alcohol prepared by this process indicates 89.25 percent by volume. There is, no doubt, a small quantity of water retained by the alcohol; on the other hand there is doubtless a small portion of alcohol retained by the water so that these errors are acting to neutralize each other and the result is a very fair approximation of the fact.

A METHOD FOR ESTIMATING QUININE AND STRYCHNINE WHEN OCCURRING IN COMMON SOLUTION.

BY A. RICHARD BLISS, JR., M.D.

INTRODUCTORY.

One of the recommendations turned over to the writer as Associate Referee on Alkaloids to the Association of Official Agricultural Chemists was "*That further work be done on the methods for separating Quinine and Strychnine, and that a method be submitted to the collaborators which has a reasonable certainty of yielding concordant results.*" A communication sent to all the collaborators on alkaloids and to the chief chemists of the great majority of the leading chemical manufacturers in which the question was asked, "*Have you been using a method for the separation of Quinine and Strychnine that has proved satisfactory?*" was answered in every case (where the communication was answered at all) in the negative. A search of recent chemical and pharmaceutical literature available to the writer failed to disclose mention of any methods for the estimation of Quinine and Strychnine when occurring in the same solution other than the *Oxalate Method*,[1] the *Tartrate Method*,[1] and the *Ferrocyanide Method* as modified by Simmonds.[2] It seems that most investigators have concluded that these methods are not entirely satisfactory.

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[1] Allen, "Commercial Analysis," Vol. VI, p. 461; Vol. IX, p. 518.

[2] *The Analyst*, 39, 81–85, 1914.

While considering the physical properties of the two alkaloids the method below presented itself, and in the hands of the writer has proved to be rather satisfactory. The very simplicity of the method seemingly indicates that surely other workers in this field must have tried this method or some modification of it, but, as already stated, available literature failed to reveal anything but mention of the three methods listed above. The writer is submitting the method for collaborative work and will be grateful for criticisms, suggestions and reports of results.

THEORY OF THE METHOD.

The preparations which are most likely to call for a method of this kind are, of course, the preparations of Iron, Quinine and Strychnine, such as the Glycerite, the Syrup and Elixir of the U. S. P. VIII. After the usual treatment of the sample with citric acid and ammonia water, the shakings out with ether-chloroform, and the recovery of the mixed alkaloidal residue from the latter by careful evaporation, advantage is taken of the following physical properties of the two alkaloids:

	Quinine.	Strychnine.
Solubility in Water[3]	1 Gm. in 1560 mils	1 Gm. in 6420 mils
Solubility in Ether[3]	1 Gm. in 1.9 mils	Very slightly
Solubility in Chloroform[3]	1 Gm. in 1.1 mils	1 Gm. in 5 mils

The separation is accomplished by (1) dissolving the mixed alkaloidal residue in sufficient diluted sulphuric acid, (2) adding an *excess of water*, keeping in mind the fact that 1 Gm. of strychnine requires 6420 mils of water for solution,[3] (3) precipitating the quinine by the addition of ammonia water (the strychnine remaining in solution since a sufficient excess of water is present to accomplish this), (4) dissolving and separating the quinine by shaking out with separate portions of ether (in which strychnine is practically insoluble), (5) shaking out the remaining ammoniacal liquid with separate portions of chloroform to dissolve out and separate the strychnine.

DETAILS OF THE METHOD.

Fifty (50) mils of the sample are treated in the usual way (as with the Oxalate or the Tartrate Methods[4]) with Citric Acid and Ammonia Water, the precipitated alkaloids removed by shaking with ether-chloroform, and the mixed alkaloids recovered by very careful evaporation in a tared dish. This weight of the mixed alkaloids is noted to be used later in checking the results of the method.

The mixed alkaloidal residue is dissolved in sufficient 5 percent sulphuric acid, transferred to a separatory funnel, and the dish washed with sufficient distilled water to make a volume of about 250 mils (1 Gm. of strychnine requires 6420 mils for solution). An excess of ammonia water is added and the mixture shaken out with seven (7) portions of ether using 35, 20, 10, 10, 10, 10, and 5, carefully washing the stem of the separatory funnel each time and running such ether used for washing into the combined ethereal fraction. The combined ethereal fraction is washed with 5 mils of distilled water and allowed to stand for 15 minutes to completely separate. A pledget of absorbent cotton is introduced into the stem

[3] U. S. P. IX, p. 349, 416.

[4] Allen, "Commercial Analysis," Vol. VI, p. 461.

of the separatory funnel, and the ethereal fraction very carefully run into a tared dish. Five (5) mils of ether are poured into the separatory funnel and run into the tared dish, and this is repeated with 5 more mils of ether. Finally the outside of the stem of the separatory funnel is carefully washed with ether and this also run into the tared dish. The ethereal solution is then *very carefully* evaporated on a bath, dried at 100° C. for an hour and weighed as quinine.

The ammoniacal liquid left after the foregoing treatments with ether, is next shaken with seven (7) portions of chloroform using 35, 20, 10, 10, 10, 10 and 5 mils, and carefully washing the stem of the separatory funnel with chloroform and running this chloroform also into the combined chloroformic fraction. The combined chloroformic fraction is washed with 10 mils of distilled water and allowed to stand 15 minutes. A pledget of absorbent cotton is introduced into the stem of the separatory funnel and the chloroformic solution carefully run into a tared dish. Ten (10) mils of chloroform are added to the contents of the separatory funnel, the mixture thoroughly agitated, and, when completely separated, the chloroformic layer run into a tared dish. The outer and inner surfaces of the separatory funnel are washed with a little chloroform and this also run into the tared dish. Lastly, the chloroformic solution is evaporated *very carefully* on a bath, removing the dish from the bath as the last portions evaporate. The residue is dried at 100° C. for an hour and weighed as Strychnine.

Both the weight of the strychnine and that of the quinine may be checked volumetrically by dissolving each residue separately in neutral alcohol, adding an excess of $\frac{N}{10}$ H_2SO_4, and titrating back with $\frac{N}{60}$ KOH, using methyl red as the indicator. One (1) mil of $\frac{N}{10}$ H_2SO_4 is equivalent to 0.0334 Gm. of strychnine and 0.0428 Gm. of strychnine sulphate. One (1) mil of $\frac{N}{10}$ H_2SO_4 is equivalent to 0.0324 Gm. of quinine and 0.0436 Gm. of quinine sulphate.

EXPERIMENTAL.

The following table gives the results of ten estimations carried out on a solution containing 0.4375 Gm. of quinine and 0.0138 Gm. of strychnine in 50 mils (Elixir I. Q. & S., U. S. P. VIII strength):

TABLE 1.

Experiment No.	No. Shakings with ether.	Quinine found. (Had 0.4375).	% Found.	No. Shakings with chloroform.	Strychnine found. (Had 0.0138).	% Found.
1	4	0.4284	98—	4	0.0131	95
2	4	0.4287	98	4	0.0130	95—
3	5	0.4333	99+	5	0.0133	97—
4	5	0.4330	99—	5	0.0132	96
5	6	0.4330	99—	6	0.0135	98
6	6	0.4333	99+	6	0.0135	98
7	7	0.4374	100—	7	0.0136	99
8	7	0.4378	100+	7	0.0133	97
9	7	0.4373	100—	7	0.0135	98
10	7	0.4377	100+	7	0.0137	99

A few preliminary experiments with solutions containing strychnine alone, and carried out by diluting the solutions first with distilled water as above, adding an excess of ammonia, and then shaking out with chloroform, gave the following:

TABLE 2.

Experiment No.	Strychnine in 50 mils.	Strychnine found.	%.	No. shakings.
1	0.0376 Gm.	0.0360 Gm.	95—	5[5]
2	0.0376 Gm.	0.0375 Gm.	99.9	7
3	0.0182 Gm.	0.0182 Gm.	100	7
4	0.0182 Gm.	0.0176 Gm.	97	5[5]

CONCLUSIONS.

The method, as shown by the results of the experiments tabulated above, is certainly reasonably accurate, in the hands of the writer at any rate. A comparison of this method with the other three methods is now being carried out by the writer, who hopes to present the results of his comparative study in the form of a paper at an early date.

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COMMERCIAL DRUG GROWING IN THE UNITED STATES IN 1918.*

BY W. W. STOCKBERGER.[1]

When some historian of the future writes the history of drug plant growing in the United States, the eventful year 1918 will stand out in sharp relief as a period of readjustment of popular opinion with regard to this important subject. The cumulative effect of the unusual conditions occasioned by the great war cannot yet be fully determined, nevertheless there is much positive evidence that certain important changes have occurred in the drug growing industry. By no means the least of these is the partial emergence of drug growing from the romantic phase which has been so pronounced during recent years into one which is more prosaic but certainly far more sensible and businesslike. Another change, brought about for the most part by bitter experience, is the growing realization that drug growing as a business proposition does not differ essentially from other types of agricultural enterprises, particularly in respect to crop risks and marketing problems, or if any appreciable difference is to be noted it is in the direction of greater uncertainty as to the successful outcome.

Stimulated by the high price levels reached by many important crude drugs during the early period of the war, or hoping thereby to render a patriotic service to our nation in a time of need, the commercial production of crude drugs was undertaken by numerous individuals who had little or no experience in this particular enterprise. In a regrettably large number of cases the outcome was very disappointing although this contingency had been foreseen and publicly predicted in advance by those whose previous experience placed them in a position to judge the situation fairly.

The situation with respect to some of the most important drug crops grown in 1918 fully demonstrates the danger of overproduction regarding which much

[5] After last shake-out still gave a decided precipitation with Mayer's reagent.

* Read before Scientific Section, A. Ph. A., New York meeting, 1919.

[1] Physiologist in Charge, Office of Drug, Poisonous and Oil Plant Investigations, Bureau of Plant Industry.

has been said in recent years. The growers of belladonna for example although not very numerous found that the product from the relatively small acreage planted was more than the market would readily absorb, and it was soon currently reported in the trade that there was a heavy overproduction of the drug with the natural result that the price rapidly declined to a figure that was discouragingly low to the grower. Producers of cannabis and digitalis also experienced some difficulty in finding a satisfactory market although price fluctuation in the case of these two drugs was not very great.

From such information as it has been possible to secure, it appears that marketable quantities of the following annual drug crops were produced under cultivation in this country last year: Belladonna, henbane, digitalis, cannabis, calendula and sage. Senega, mandrake, pink root, valerian, cypripedium and blood root were also grown but in negligible quantity. As in former years the following oils were produced from cultivated plants: Peppermint, spearmint, wormwood, chenopodium and tansy. To obtain accurate data on all these crops was practically out of the question for a number of reasons. The individual growers are widely scattered over the country, thus making a personal canvass impossible. The only recourse was to send out written requests for the desired information but as complete lists of the growers of various drug plants are not available it is practically certain that many growers were not called on for a report. Moreover, another element of uncertainty was introduced by the fact that no reply was made to many of the requests sent out. It must therefore be distinctly understood that the figures given later in this report are to be taken with certain reservations and that with two or three exceptions, they merely represent the reported production which may be far from the actual production.

BELLADONNA.

The war-time interest in drug growing was chiefly centered on belladonna, and the success attained by some growers in 1917 was reflected in the increased acreage planted in the year following. The general distribution of the acreage and the production are shown in the accompanying tabulation:

State.	No. of growers.	Average.	Production in pounds. Herb.	Leaves.	Stems.	Root.
Michigan	13	45.5	20950	10075	2550	9825
Indiana	7	32.73	2944	11114	3680	2445
New Jersey	4	34.75	26725	340	25	5050
Pennsylvania	6	41.75	1500	11258	1585	3017
California	24	95.63	37675	20984	5500	1430
Maryland, Virginia, West Virginia, Illinois, Wisconsin, Oregon, Iowa	6	23.35	1256	5540	2373	510
Total	60	273.71	91050	59311	15713	22277

This tabulation which represents reports from 60 growers and an area of 273 acres, or an average of 4.5 acres for each grower, shows an average yield of approximately 600 pounds of belladonna herb (including leaves and stems), per acre.

From 136 acres twenty-four growers harvested 11.13 tons of root, an average production of 164 pounds of root per acre. Summarized, the total production for the year was approximately 83 tons of herb (including leaves and stems), and 11 tons of root.

The average yield by states expressed in pounds per acre was as follows: New Jersey 780, Michigan 703, California 671, Indiana 542, Pennsylvania 343. These data are insufficient to form a basis for any sound conclusions as to the section of this country most favorable for the cultivation of belladonna. It can be stated, however, that so far the results in California have been less favorable than were expected. Mr. N. R. Mueller of the Office of Drug, Poisonous and Oil Plant Investigations, visited practically all of the plantings of belladonna in California during the summer and fall of 1918 and found that in addition to the acreage reported above, about 35 acres planted to belladonna had not been harvested on account of failure of the crop. He also found that the potato stalk borer, *Trichobares trinotata*, had become a serious pest of belladonna, especially on plantings of second year growth, and that the ravages of this insect had introduced a large element of uncertainty with respect to this crop. Indeed the opinion has gained ground among growers that the cultivation of belladonna in southern California will be greatly reduced if not abandoned in the near future unless some effective means can be found to prevent the destructive action of the potato stem borer on this crop.

CANNABIS.

During the year under consideration, the quantity of cannabis produced was sufficient to meet market demands for the American grown drug. The reported acreage and production were as follows:

State.	No. of growers.	No. of acres.	Production in pounds.
Illinois	1	20	30,000
New Jersey	2	9	5,350
Pennsylvania	1	3.75	4,300
South Carolina	13	29.50	10,000
Virginia	1	20	10,000
Total	18	82.25	59,650

Owing to the different methods employed in harvesting and preparing cannabis for market, no just comparison can be made of acre yields in the different geographical locations. The South Carolina cannabis is produced under the general supervision of a representative of the Bureau of Plant Industry, and every precaution is taken to keep all of the drug marketed from that state up to the pharmacopoeial standard. After the flowering tops are harvested they are thoroughly cured under cover, then worked over by hand and all the stems and large foliage leaves removed. This process gives a drug of high quality, but greatly reduces the net or marketable yield per acre, since the portion rejected often equals or exceeds in weight the part which is regarded as suitable to offer to the drug trade.

DIGITALIS.

Judging from the reports received the cultivation of digitalis does not as yet appear to be established on a commercial basis. Small areas of cultivated digitalis,

usually from one-half to one acre in extent, were harvested in Pennsylvania, South Carolina, Washington, California and some other states. The figures which are available do not warrant even an approximate statement of the probable production but there is little doubt that with proper encouragement the quantity necessary to satisfy domestic needs would be readily available. In some sections the yield of the cultivated drug appears to be quite satisfactory, and unless the cost of production is excessive the crop should show a profit to the grower.

In addition to the strictly commercial plantings, digitalis was grown on a relatively large scale at several of the more important drug gardens which are maintained in connection with a number of Schools of Pharmacy. Several tons of digitalis leaves and a quantity of seed was also collected from plants of wild growth in the general region of the Coast Range of mountains on the Pacific Coast. The possible competition of this wild material is a factor that must be taken into account in the future development of the production of digitalis under cultivation.

CALENDULA.

Calendula continued to receive the attention of a few growers in 1918, notwithstanding the failure of the market to recover from the decline in prices that was precipitated in 1916 by the importation of this product from Japan. The reports at hand show that in 1918 two acres of calendula were grown in New York, six acres in Massachusetts, and a number of small plots in Los Angeles County, California. Some growers marketed the florets only, while others were able to sell the whole flowers in both the fresh and the dried state. Since these were not distinguished in the reports, no figure can be given for the total production.

SAGE.

Although sage is widely grown as a home and market garden crop, a comparatively small number of growers have attempted quantity production for the spice trade. Efforts in this direction have met with moderate success in Wisconsin, Missouri, Ohio, Massachusetts and South Carolina. A total of 12 growers from these states report the harvesting of from 8 to 10 acres of sage with a production of from 9,000 to 10,000 pounds. The yield per acre ranged from 300 to 1,250 pounds, the lower figure being largely due to unfavorable weather conditions which prevailed in some sections during the early part of the year.

HENBANE.

The cultivation of henbane has continued to be a very difficult problem for most growers. In the year under consideration attempts were made to grow henbane in a number of states but with little success except in Michigan, where one grower at least has been able to produce a good crop. The great decline in price from former high levels and the difficulties encountered in the production of henbane seem likely to retard progress in the cultivation of this crop at least for the immediate future.

This brief, although incomplete résumé of the situation, may serve to show something of the extent of the present development of the commerical cultivation of medicinal plants. It is evident that all of these enterprises are small and that in many cases they can hardly be regarded as having passed the experimental

stage. The experience of the past few years seems more than ever to point out the futility of depending upon a large number of amateur drug raisers to supply market demands. From the standpoint of the drug manufacturer, a constant and reliable source of supply is of primary importance, and it is believed that the interests of both producers and manufacturers will be best conserved by restricting drug growing so far as possible to those individuals who are in a position to undertake the work on a permanent business basis.

FERRUM REDUCTUM.*

BY CHARLES H. LAWALL AND J. W. E. HARRISSON.

The standards for Ferrum Reductum were changed in the U. S. P. IX to provide for greater definiteness and accuracy, but were not made any more rigid than were the requirements of the U. S. P. VIII as regards the more important tests.

The test of greatest importance from the standpoint of the prescriber is the test for limit of sulphide.

Sulphide in reduced iron originates in the process of manufacture through the fact that the ferric oxide has not been entirely freed from soluble sulphates. These sulphates in the process of reduction are changed to sulphides and enter into combination with the iron to produce ferrous sulphide. The objectionable character of this impurity will be appreciated when it is realized that Ferrum Reductum containing larger amounts of sulphide than permitted by the U. S. P. test, will give evidence of the fact by unpleasant eructations of hydrogen sulphide when the reduced iron comes into contact with the hydrochloric acid of the gastric juices.

When the present standards were framed prior to 1914, there was no difficulty in obtaining supplies of proposed U. S. P. quality nor was there any protest on the part of any manufacturers of inorganic chemicals, who were consulted in framing these standards, that the requirements could not be met. Shortly after the U. S. P. IX became official in 1916, it became apparent that Ferrum Reductum of official quality was not being supplied by the manufacturers and wholesalers. Instead, an article was furnished which either bore the anomalous or misleading subterfuge "technical" so often resorted to by chemical manufacturers or it was stated on the label that "it contains sulphides in slight excess of the U. S. P. limit."

While the responsibility lies primarily with the wholesalers and manufacturers for furnishing a substandard article which is used for no other purpose than in medicine, there is also a lack of watchfulness evident on the part of the retail pharmacist who accepts and uses such an inferior article in filling prescriptions.

If every pharmacist would have returned to the manufacturer each package so labeled and would have followed this action with a vigorous protest, it would not have taken long for American chemical manufacturers to have realized their

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* Read before Section on Practical Pharmacy and Dispensing, A. Ph. A., New York Meeting, 1919.

responsibility in the matter and to have taken steps to supply an article of the desired quality.

The reason given for the failure to supply an official article at the present time is that prior to the war all supplies of reduced iron came from Europe and that since that time they (the manufacturers) have been unable to obtain supplies of equal quality.

Shades of Maisch and Procter. Where is our vaunted progress in chemical manufacturing if such flimsy pretexts are to be accepted by American pharmacists for the failure to supply an article of official quality.

The real reason is that American dispensing pharmacists have supinely accepted what was sent to them without protest or question and the manufacturers have naturally taken advantage of that fact instead of maintaining a high standard of quality voluntarily.

As was the case with zinc oxide a few years ago, no improvement can probably be hoped for until some state boards make a few inspections and prosecutions and bring the entire pharmaceutical trade to a realization of its responsibilities.

The standard for sulphides is not an unnecessary nor an unattainable standard and it should be a matter of personal pride with American manufacturers to meet its requirements.

The following tabular statement shows the results of the examination of seven samples purchased in the open market representing four well known manufacturers and two wholesale druggists:

Sample No.	1.	2.	3.	4.	5.	6.[1]
Ignition test	Normal	Normal	Normal	Normal	Normal	Abnormal
Reaction	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
Sulphides time limit	1/2 min.	3 1/2 min.	25 sec.	15 sec.	10 sec.	15 sec.
Insoluble residue	Normal	Normal	Normal	Normal	Normal	3.3 percent (excessive)
Arsenic test	Normal	Normal	Normal	Normal	Normal	Normal
Assay	97.1%	89.03%	90.65%	99.4%	95.05%	90.35%

An attempt was made to devise an easy and simple method for the quantitative determination of the combined sulphur but without avail.

A method in which the evolved H_2S was collected in a solution of cadmium chloride and the cadmium sulphide later determined by iodometric titration showed the amount of ferric sulphide in the samples examined to range between 0.124 and 0.40%.

This is hardly sufficient to produce any adverse physiological effect but the reason for the test as previously stated is sufficiently strong to warrant its retention and the foregoing exposition of existing conditions will, it is hoped, result in immediate improvement in the quality of the article as supplied by American manufacturing chemists.

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[1] Sample No. 6 from its physical appearance was nothing but fine iron filings.

PROPOSED CHANGES IN THE SOAPS OF THE PHARMACOPOEIA.*

BY E. V. KYSER.

The purpose for which a soap is to be used should determine its composition.

The ingredients used in the soaps of the Pharmacopoeia and the methods of manufacture directed are not economical to use and do not produce the best finished product.

1. SAPO—SOAP.

The official soap of the U. S. P. IX, familiarly known as Castile soap, is made from olive oil and sodium hydroxide. The term "Castile Soap" which signifies a pure olive oil soap, means very little to-day, because this once highly recommended soap has been replaced by other soaps which are superior in quality and can be produced more economically. While olive oil is a non-drying oil, it is composed of a large proportion of unsaturated glycerides, as evidenced by its high iodine value, which is undesirable for soap-making purposes. Olive oil soaps as well as other soaps made from unsaturated oils are readily decomposed and quickly become rancid.

In the manufacture of soaps for the toilet the use of corn, cotton seed, soya, peanut or any other oil of low titer and high iodine value is objectionable because the resultant soaps become rancid very readily, yet olive oil which is similar in chemical composition to the oils named is used and recognized by the Pharmacopoeia. This preference for olive oil soap no doubt originally arose from the fact that olive oil was the only oil suitable for soap making which was obtainable in suitable quantity and quality when the manufacture of soap was in its infancy. After the industry was established, this preference was, of course, fostered by interested manufacturers for their own profit. The general public has long since been won away from the preference for olive oil soap by the substitution of other and better soaps, but the conservatism of the Pharmacopoeia makers has prevented any change in this authority.

Olive oil soaps are neither chemically nor physically adapted for general use. They have a disagreeable odor, are unsightly in appearance, do not produce a good lather and have less value as detergents than soaps made from other oils and fats. Moreover, they are generally made by the semi-boiling method which, at times, fails to insure complete saponification. This process is also open to the objection that any impurities present in olive oil are retained in the finished soap. Olive oil soaps also contain a high proportion of water, the Pharmacopoeia allowing 36 percent of moisture in the soap in bars and 10 percent in the powdered soap.

The Pharmacopoeia is the only place where olive soap is given the preference. In all the purchases of soap made by the United States Government, the State and the Municipal governments, except in the cases where the U. S. P. soap is named, the specifications stipulate that the soap shall be a milled soap with 80 percent tallow and 20 percent coconut oil as a base. I propose that the Pharmacopoeia shall

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* Read before Section on Practical Pharmacy and Dispensing, A. Ph. A., New York meeting, 1919.

abandon its antiquated and impracticable standards and shall recognize the progress that has been made in the manufacture of soap and shall adopt standards in conformity with the best modern practice in soap making. I append a set of specifications for the consideration of the Committee of Revision of the Pharmacopoeia.

Sapo.—A milled soap, made by the settled or grained process, consisting of 80 percent tallow and 20 percent coconut oil in conjunction with sodium hydroxide as the saponifying agent. The tallow employed shall be prime tallow with less than 3 percent free acid, and the coconut oil shall be Cochin grade, water white and under 5 percent free acid. Said soap shall be of a cream color and comply with the following standards:

Volatile matter at 105° C. shall not exceed 15 percent.

Free alkali, calculated as NaOH, shall not exceed 0.25 percent.

Alkali, alkaline salts calculated as sodium carbonate (Na_2CO_3), shall not exceed 0.3 percent. Not more than one-half of the alkali as alkaline salts shall be sodium silicate. (The term "Alkaline Salts" here includes carbonates, borates, and silicates.)

Sulphate, calculated as sodium sulphate (Na_2SO_4), shall not exceed 0.1 percent.

Chloride calculated as sodium chloride (NaCl), shall not exceed 0.3 percent.

Matter insoluble in water shall not exceed 0.1 percent.

Unsaponified saponifiable matter shall not exceed 0.1 percent.

Rosin, sugar, and foreign matter shall not be present.

Titer and acid number of the mixed fatty acids prepared from the soap must be, respectively, not less than 37° and not less than 203 nor more than 212.

The specifications set forth above are those adopted by the U. S. Government and by state and municipal authorities generally. These specifications can be met by all American manufacturers of toilet soaps and the product will prove much more satisfactory for all purposes than the olive oil soap now recognized. The only objections to the change will come from the European manufacturers, the sale of whose soap will be affected. These standards are recognized by the U. S. Government and in the state as well as city specifications generally.

Soap made in compliance with these standards constitute the general methods of all American soap manufacturers of toilet soap. Such soaps are ideal in their composition. They are stable, lather freely in hot or cold water, are readily soluble, mild, emollient and free from deleterious matter.

Soap occurs as a white or whitish solid in the form of bars, hard yet easily cut when fresh, or as a fine yellowish white powder, having a faint peculiar odor, free from rancidity, and a slightly alkaline taste. It is soluble in water or alcohol, dissolving more readily, however, with the aid of heat. Its aqueous solution is alkaline to litmus.

METHODS OF TESTING.

Such a soap as is indicated by the preceding specifications will conform to the requirements formulated by the U. S. Bureau of Standards. This Bureau has issued a circular of *Specifications for and Methods of Testing Soaps*. Copies of this pamphlet can be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., for five cents each.

II. SAPO MOLLIS—SOFT SOAP.

Soft soap which will meet every requirement of the Pharmacopoeia can be successfully made from the oils of cotton seed, corn, soya bean, peanut and various other vegetable oils and with the substitution of soda for potash.

Sodium soaps, while not as soft nor as soluble as potash soaps, are sufficiently soluble for the uses of the Pharmacopoeia and their detergent and lathering properties are fully as good.

The fifty mils of alcohol, used in the Pharmacopoeia formula, is completely lost as it is volatilized during the process of making.

The method usually pursued for making soft soap is as follows:

The oil to be saponified is run into kettles equipped with agitators and heated to a temperature of 160–170° F. (71–77° C.). The calculated amount of alkali is added to the total amount of water to be used and is now slowly added to the oil and the whole is boiled, with stirring, until saponification is complete. The soap is allowed to cool sufficiently and then run into containers. The same procedure may be followed on a small scale, or the alkali may be stronger and the soap hydrated after saponification; this eliminates the difficulties met with in the pharmacopoeial method.

The method for analysis given by the Pharmacopoeia is inadequate, in fact, a soap made of the above ingredients would conform with the pharmacopoeial requirements.

I propose that the same methods of analysis proposed for soap be adopted for soft soap with the necessary changes as to moisture, titer, iodine value, acid number, etc.

III. LINIMENTUM SAPONIS—SOAP LINIMENT.

This preparation should be made in accordance with the present formula and method except that the dried soap used can be supplanted by the addition of 120 Gm. of Sapo Mollis.

IV. LINIMENTUM SAPONIS MOLLIS—LINIMENT OF SOFT SOAP.

This should be made by the present method and formula with the substitution of the proposed soft soap.

V. LINIMENTUM CHLOROFORMI—CHLOROFORM LINIMENT.

This should be made by the present formula and method with the substitution of the proposed soap liniment.

VI. LINIMENTUM CALCIS—LIME LINIMENT.

Lime liniment or carron oil is not a true soap as it is an emulsion of oil with water formed by the presence of a small amount of calcium soap. There is no particular advantage in the use of linseed oil, any other oil could be used as well. The medicinal properties of the liniment are due entirely to the bland and emollient character of the product, and any other oil would give the same results.

I would advise the substitution of soya bean oil for linseed oil in this liniment.

VII. LIQUOR CRESOLIS COMPOSITUS—COMPOUND SOLUTION OF CRESOL.

The only use of soap in this preparation is for the purpose of rendering cresol miscible with water. Any soap which accomplishes this purpose can be substituted for the expensive linseed oil, potash soap. The alcohol used in the formula is not necessary and does not serve any useful purpose. I propose that Liquor Cresolis Compositus be made from equal parts by weight of Sapo Mollis and cresol.

Solution of cresol made by this formula mixes clear with water in any proportion. It gives a light colored solution and affords a method of making that should meet with the approval of pharmacists. Cresol is an excellent solvent for soaps and the soft soaps can readily be dissolved in the cresol at a low temperature.

I respectfully suggest that this paper be referred by the Section to the Committee of Revision of the U. S. Pharmacopoeia. I submit samples which may also be turned over to the committee.

LABORATORY OF THE CINCINNATI SOAP CO.,
CINCINNATI, OHIO.

USE OF HYDROGENATED OILS AND FATS IN PHARMACY.*

BY E. V. KYSER AND C. A. MAYO.

Hydrogenation is the process of applying latent hydrogen to organic compounds which are unsaturated or, in other words, having free bonds which are capable of taking up additional hydrogen, oxygen, or any of the halogens.

Hydrogenation, however, does not confine itself to oils alone, but at the present time we are interested in this special field, the hydrogenation of oils and fats, in an endeavor to procure a substance which will prove an efficacious substitute for lard as an ointment base.

There are many methods of hydrogenation proposed, as well as in practice. The early work on hydrogenation of oils and fats was (while somewhat crude and non-applicable to quantity production) sufficient to show the feasibility of converting unsaturated glycerides of higher fatty acids into saturated compounds.

Primarily, the object sought was to convert olein or oleic acid into stearin or stearic acid which is largely used in the manufacture of candles.

The difficulty in manipulation of the earlier processes was the sluggishness or inactivity of hydrogen, and it is only within the last decade that this has been overcome by the use of catalyzers which accelerate the combining power of hydrogen and unsaturated oils.

There are many proposed catalytic agents and methods of preparation. Among these are various salts of nickel, palladium, iron, zinc and copper, as well as other metals.

In quite a number of instances these catalysts are supported by carriers or vehicles in the form of porous substances such as fullers' earth, pumice stone and kieselguhr, which have a tendency to finely divide the particles of catalyzers

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* Read before Section on Practical Pharmacy and Dispensing, A. Ph. A., New York meeting, 1919.

used. Freshly reduced nickel oxide, prepared by heating nickel to a high temperature and subsequently reducing by hydrogen, is most generally employed and is calculated to produce the best results. Generally, the prepared nickel oxide is supported on fullers' earth or pumice stone.

The procedure for hydrogenation is quite simple and leads to results that are satisfactory. The oil or fat to be hydrogenated is intimately mixed with the catalyzer in an autoclave under pressure at a temperature of 160 degrees to 250 degrees C. (depending upon the process followed as well as the oil or fat used). Either hydrogen or water gas is supplied in the quantities specified, the whole being agitated so as to insure complete or partial saturation, as desired. The procedure is regulated by taking samples which are controlled by either a titer or iodine absorption test, or by both.

Hydrogenation has been resorted to in this country mostly for the production of lard substitutes, compound lard and butter compounds, and soaps. In Europe where unsaturated oils, which are unsuited for the manufacture of soaps, are cheap and abundant, the process of hydrogenation is quite popular.

There has been some work done in this country on hydrogenated oils for ointment bases. Most oils when hydrogenated to a degree whereby their iodine value is low, become too hard and are unsuited for this purpose. In an endeavor to procure a substitute, which is of very near the same consistency as lard and having a low iodine value, we have chosen coconut oil.

This oil, nominally, is easily obtained and is usually the lowest priced of all the oils. The iodine value is low and it requires very little hydrogen to saturate its glycerides. The process was carried out in the usual way and the finished oil had an iodine value of one and a slightly higher melting point than that of lard.

The hydrogenated oil is particularly suited for use in the preparation of iodine ointment. The fact that the iodine value of lard is high and consequently the amount of iodine absorbed is large has been responsible for the substitutions of petrolatum and petroleum oils in iodine compounds to overcome this quality.

Fats for use as ointment bases are much better suited than are the petroleum substitutes since they are more readily absorbed by the skin. The wax in the pharmacopoeial ointments can be replaced by a hydrogenated oil of a higher titer and, by proper admixtures, ointment bases of any consistency can be made.

We have prepared all of the ointments of the Pharmacopoeia from a base containing hydrogenated coconut oil and stearin. The ointments are good in appearance and consistency. We have not had the opportunity to observe these for any length of time and consequently can make no definite recommendation.

We will do additional work along this line and report our observation at a later date.

ABSTRACT OF DISCUSSION.

MR. MAYO: The paper on "Proposed Changes in the Soaps of the Pharmacopoeia" bears on the paper on "The Uses of Hydrogenated Oils in Pharmacy," by Mr. Kyser and myself. I would ask that the paper and its samples be referred to the Committee on U. S. Pharmacopoeia.

MR. NITARDY: My understanding of the hydrogenation of oils is, that chemically the glycerides of oleic acid or liquid oils are changed into glycerides of stearic acid and for that reason the finished product of the completely hydrogenated oils are physically similar to stearin or tallow. Is that always the case or are there physical differences in the product?

MR. MAYO: Physically there is a difference in the degree of hardness and that is shown and mentioned in the paper; chemically the reaction is apparently the same.

MR. GRIFFITH: I wonder if I am right in saying that it depends on the nature of the oil with which you start. Palmitin oils, oils containing an amount of palmitin, do not show physical changes as quickly as those containing a large amount of olein. Consequently an oil containing a certain amount of palmitin and olein is not of such hard consistency when the end reaction is reached.

MR. JONES: About five years ago I started with some investigations along these lines. I used "Crisco;" tried it out as a substitute for ordinary lard in the making of zinc oxide ointment, advocating the adoption of a petrolatum vehicle in that particular ointment, which was afterward rejected. I have a sample of that ointment on hand which is fully five years old. However, I do not advocate keeping zinc ointment five years. This sample is perfectly smooth and a fine ointment.

One of the peculiarities of hydrogenated fats, particularly with the "Crisco," is, that when melted and quickly cooled a smooth product is obtained. The stiffness of such fat is dependent on the amount of unsaturated fatty acids or glycerides which are present.

Hydrogenated cacao butter is peculiar. When it is hydrogenated a waxy substance results which resembles in appearance carnauba wax. It has a brittle structure which probably makes it useful as a base for cacao butter suppositories.

I took up the matter with the "Crisco" manufacturers and asked them why they could not put out a stiffer hydrogenated fat than "Crisco." They replied that it was used mostly for cooking and the women did not care whether it cooled smoothly, or not. By inclusion of fifteen percent of wax a very smooth product of desirable consistency is obtained.

THE CHAIRMAN: About four years ago I had occasion to examine a sample of zinc oxide ointment. I thought there was petrolatum in it, but I found that was not the case. The melting point of the fat was a little higher than it should be, and it was certainly made of a hydrogenated oil. It was put up by a large pharmaceutical manufacturing firm, labeled strictly U. S. P. If the degree of absorption is the same it makes no particular difference, or as is usually the case with zinc oxide ointment, but when it is used in cases where rapidity of penetration is essential this point should be considered.

(Samples of hydrogenated oils were supplied by courtesy of Procter & Gamble Company.—E. V. K.)

LABORATORIES OF THE CINCINNATI SOAP COMPANY
AND THE WM. S. MERRELL COMPANY.

THE FUNCTION OF GLYCERIN IN SOME U. S. P. AND N. F. PREPARATIONS.*

BY EDSEL A. RUDDIMAN.

The object of these experiments was to determine if possible the value of glycerin in some preparations; whether it adds to the permanency or in any way makes them better.

Samples were made up in August 1918, following the formulas of the U. S. P. and N. F. At the same time samples were made up in which glycerin was replaced by other fluids. Five samples of each preparation were made as follows:

No. 1. In each case the formula given was used.
No. 2. Glycerin was replaced by syrup.
No. 3. Glycerin was replaced by water.
No. 4. Glycerin was replaced by a commercial solution of invert sugar.

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* Read before Section on Practical Pharmacy and Dispensing, A. Ph. A., New York meeting, 1919.

No. 5. Glycerin was replaced by a solution of glucose, specific gravity about 1.21.

To avoid repetition, reference will be made to these samples by number instead of stating the modifications of the formula each time.

The solution of invert sugar used had some yellow color and this accounts in some cases for the preparations made from it being darker than others.

These preparations were examined about the middle of February 1919, and again in August, the notations being given in the following table:

TABLE SHOWING VARIATIONS IN PREPARATIONS—PERCENT GLYCERIN REFERS TO AMOUNT IN U. S. P. OR N. F. PREPARATION.

Preparation.	When first made.	At end of six months.		At end of one year.	
	Color.	Color.	Appearance—Precipitate.	Color.	Appearance—Precipitate.
Elixir of Bismuth (12.5% Glycerin).					
No. 1	Colorless	Colorless	Clear	Colorless	Clear
No. 2	Colorless	Colorless	Clear	Colorless	Clear
No. 3	Colorless	Colorless	Clear	Colorless	Clear
No. 4	Pale yellow	Deep yellow	Clear	Light amber	Clear
No. 5	Colorless	Colorless	Clear	Colorless	Clear
Remarks—Practically the same except in sweetness.					
Elixir Calcium and Sodium Glycerophosphates (30% Glycerin).					
No. 1	Colorless	Colorless	Clear	Colorless	Clear
No. 2	Colorless	Colorless	Clear	Very pale yellow	Clear
No. 3	Colorless	Colorless	Clear	Colorless	Clear
No. 4	Pale yellow	Pale yellow	Clear	Pale yellow	Clear
No. 5	Colorless	Colorless	Clear	Colorless	Clear
Remarks—Difference in sweetness. No. 1 had disagreeable taste on account of so much glycerin—Choice, No. 2.					
Elixir of Gentian (5% Glycerin).					
No. 1	Red	Red	Clear	Red	Clear
No. 2	Red	Red	Clear	Red	Clear
No. 3	Red	Red	Clear	Red	Clear
No. 4	Red	Red	Clear	Red	Clear
No. 5	Red	Red	Clear	Red	Clear
REMARKS—No appreciable difference—Choice, No. 2.					
Compound Elixir of Glycerophosphates (35% Glycerin).					
No. 1	Greenish yellow	Reddish	Slimy precipitate	Dirty brown	Black precipitate covering bottom of bottle
No. 2	Greenish yellow	Deep straw	Flaky precipitate	Pale greenish brown	Similar to No. 1
No. 3	Greenish yellow	Light amber	Flaky precipitate	Light straw	Flaky, brownish yellow
No. 4	Darker green	Light amber	Flaky precipitate	Red-brown	Light brown
No. 5	Similar to No. 1	Deep straw	Slight precipitate	Similar to No. 2	Light brown
Remarks—None of these samples are satisfactory. In taste, No. 2 is preferable to No. 1.					

Preparation.	When first made.	At end of six months.		At end of one year	
	Color.	Color.	Appearance—Precipitate.	Color.	Appearance—Precipitate.
Solution of Ferric Hypophosphite (15% Glycerin).					
No. 1.....	Green	Green	Crystalline film at bottom	Dark green	Thin crystalline layer
No. 2.....	Green	Much darker than No. 1	Considerable precipitate	.....	.....
No. 3.....	Green	Similar to No. 1	Crystalline film	Lighter than No. 1	Similar to No. 1. Some, but suspended
No. 4.....	Green	Much darker than No. 1	Not perceptible	Dirty reddish brown	.....
Remarks—Considerable pressure in all. Bottle No. 2 burst.					
Solution of Ferrous Chloride (25% Glycerin).					
No. 1.....	Green	Green	Clear	Yellowish green	Very slight flocculent precipitate
No. 2.....	Green	Very dark	Slimy precipitate	Light brown	Dark brown precipitate covers bottom
No. 3.....	Green	Green	Clear	Light green	Clear precipitate
No. 4.....	Green	Dark brown	Slimy precipitate	Darker than No. 2	Similar to No. 2
No. 5.....	Green	Green	Slight precipitate	Light green	Very slight precipitate
Remarks—Nos. 2 and 4 had an odor of caramel. No ferric iron present at end of a year.					
Solution of Ferric Salicylate (17.5% Glycerin).					
No. 1.....	Deep red	Deep red	Clear	Very dark	None settled
No. 2.....	Deep red	Deep red	Clear	Very dark	None settled
No. 3.....	Deep red	Darker than No. 1	Clear	Very dark	None settled
No. 4.....	Deep red	Very dark	Clear	Very dark	None settled
No. 5.....	Deep red	Darker than No. 1	Slight precipitate	Very dark	None settled
Remarks—All samples were a little turbid.					
Compound Solution of Hypophosphites (35% Glycerin).					
No. 1.....	Light yellow	Straw	Clear	Straw	Clear
No. 2.....	Light yellow	Straw	Clear	Darker than No. 1	Clear
No. 3.....	Light yellow	Amber	Clear	Dark amber	Clear
No. 4 (lost).....	.....	.....	.....	.....	.....
No. 5.....	Light yellow	Similar to No. 1	Clear	Between No. 1 and No. 2	Clear
Remarks—Trace of mold in No. 2 and No. 5—Choice, No. 1.					
Compound Solution of Phosphates (37.5% Glycerin).					
No. 1.....	Greenish yellow	Red straw	Considerable flaky precipitate	Reddish brown	Considerable crystalline mass
No. 2.....	Similar to No. 1	Dark reddish	Considerable precipitate	Very dark reddish brown	Crystalline precipitate
No. 3.....	Similar to No. 1	Light straw	Similar to No. 2	Light greenish yellow	Similar to No. 2
No. 4.....	Little darker than No. 1	Very dark red	Slight precipitate	Similar to No. 2	Less than No. 2
Remarks—Crystals were small isodiametric. Odor of caramel in No. 2 and No. 4. None were satisfactory.					

Preparation.	When first made.	At end of six months.		At end of one year.	
	Color.	Color.	Appearance—Precipitate.	Color.	Appearance—Precipitate.
Syrup of Hypophosphites (5% Glycerin).					
No. 1	Colorless	Colorless	Clear	Clear	Colorless
No. 2	Colorless	Colorless	Clear	Colorless	Clear
No. 3	Colorless	Colorless	Clear	Colorless	Clear
No. 4	Pale yellow	Pale yellow	Very slight precipitate	Yellowish	Slight precipitate
No. 5	Colorless	Colorless	Clear	Colorless	Clear
Remarks—Very slight growth in No. 2 and No. 3—Choice, No. 1					
Syrup of Ipecac (10% Glycerin).					
No. 1	Red-brown	Red-brown	Slight precipitate	Red-brown	Slight precipitate
No. 2	Red-brown	Red-brown	Slight precipitate	Red-brown	Slight precipitate
No. 3	Red-brown	Red-brown	Slight precipitate	Red-brown	Slight precipitate
No. 4	Red-brown	Red-brown	Slight precipitate	Lighter than No. 1	Slight precipitate
No. 5	Red-brown	Darker than No. 1	Slight precipitate	Darker than No. 1	Slight precipitate
Remarks—No. 3 is U. S. P., except acetic acid is omitted—Choice, No. 2.					
Syrup of Wild Cherry (5% Glycerin).					
No. 1	Red	Red	Slight precipitate	Red	Slight precipitate
No. 2	Red	Red	Slight precipitate	Red	Slight precipitate
No. 3	Red	Red	Slight precipitate	Red	Slight precipitate
No. 4	Red	Red	Slight precipitate	Red	Slight precipitate
No. 5	Red	Red	Slight precipitate	Red	Slight precipitate
Remarks—When first made, No. 1 was slightly darker than others, but in February they were similar—Choice, No. 2.					
Syrup of Ammonium Hypophosphite (10% Glycerin).					
No. 1	Pale yellow	Pale yellow	Very slight precipitate	Yellow	Very slight precipitate
No. 2	Pale yellow	Pale yellow	Very slight precipitate	Yellow	Very slight precipitate
No. 3	Pale yellow	Slightly lighter	Very slight precipitate	Sample lost	.....
No. 4	Slightly darker	Slightly darker	Very slight precipitate	Light amber	Very slight precipitate
No. 5	Pale yellow	Pale yellow	Very slight precipitate	Yellow	Very slight precipitate
Remarks—Practically no difference except No. 4 is deeper yellow—Choice, No. 2.					
Syrup of Ferrous Chloride (12.5% Glycerin).					
No. 1	Pale yellow	Pale yellow	Very slight precipitate	Light yellow	Very slight precipitate
No. 2	Pale yellow	Pale yellow	Very slight precipitate	Light yellow	Very slight precipitate
No. 3	Pale yellow	Pale yellow	Very slight precipitate	Light yellow	Very slight precipitate
No. 4	More yellow	Pale yellow	Very slight precipitate	Light brown	Very slight precipitate
No. 5	Pale yellow	Pale yellow	Very slight precipitate	Light brown	Very slight precipitate
Remarks—Practically no difference except No. 4 is a little darker. No ferric iron was present at end of a year.					

Preparation.	When first made.	At end of six months.		At end of one year.	
	Color.	Color.	Appearance—Precipitate.	Color.	Appearance—Precipitate.
Syrup of the Phosphates of Iron, Quinine and Strychnine (10% Glycerin).					
No. 1.....	Light yellow	Dark	Small crystals	Dark reddish	Crystalline precipitate
No. 2.....	Light yellow	Darker than No. 1	Similar to No. 1	Similar to No. 1	Similar to No. 1
No. 3.....	Light yel'ow	Slightly darker than No. 1	Nearly clear	Similar to No. 1	Very slight precipitate
No. 4.....	Deeper yellow	Darkest	Clear	Darker than No. 1	Very slight precipitate
No. 5.....	Light yellow	Similar to No. 2	Crystals on sides of bottle	Similar to No. 1	Large crystalline precipitate
Remarks—None of these formulas are satisfactory.					
Compound Syrup of Hypophosphites (5% Glycerin).					
No. 1.....	Pale straw	Deep straw	Clear	Deeper than others	Clear
No. 2.....	Pale straw	Pale straw	Clear	Pale straw	Clear
No. 3.....	Pale straw	Pale straw	Clear	Pale straw	Clear
No. 4.....	Straw	Deep straw	Clear	Darker than No. 3	Clear
No. 5.....	Pale straw	Pale straw	Clear	Lightest	Clear
Remarks—But little difference in color between them. Slight growth in No. 5—Choice, No. 2.					
Compound Syrup of the Phosphates (15% Glycerin).					
No. 1.....	Red	Dark red	Flocculent precipitate	Dark red	Considerable precipitate
No. 2.....	Red	Similar to No. 1	Less precipitate than No. 1	Similar to No. 1	Less than No. 1
No. 3.....	Red	Similar to No. 1	More precipitate than No. 2	Similar to No. 1	Least precipitate
No. 4.....	Red	Very dark	Less precipitate than No. 2	Similar to No. 1	Similar to No. 1
No. 5.....	Red	Very dark	Less precipitate than No. 1	Darker than No. 1	Similar to No. 2
Remarks—None of these samples were satisfactory.					
Syrup of Phosphates with Quinine and Strychnine (15% Glycerin).					
No. 1.....	Light greenish yellow	Dark	Bulky precipitate	Dark reddish brown	Bulky precipitate
No. 2.....	Light greenish yellow	Dark	Less than No. 1	Similar to No. 1	Slight precipitate
No. 3.....	Light greenish yellow	Lighter than No. 1	Less than No. 2	Lighter than No. 1	More precipitate than No. 2
No. 4.....	Straw	Darker than others	Slight precipitate	Similar to No. 1	More precipitate than No. 3
No. 5.....	Light straw	Lighter than No. 1	Slight precipitate	Similar to No. 1	Less precipitate than No 1
Remarks—None of these samples were satisfactory.					

Preparation.	When first made.	At end of six months.		At end of one year.	
	Color.	Color.	Appearance—Precipitate.	Color.	Appearance—Precipitate.
Compound Syrup of White Pine (10% Glycerin).					
No. 1.....	Red	Red	Flocculent precipitate	Red	Flocculent precipitate
No. 2.....	Red	Red	Flocculent precipitate	Red	Flocculent precipitate
No. 3.....	Red	Red	Flocculent precipitate	Red	Flocculent precipitate
No. 4.....	Red	Red	Flocculent precipitate	Red	Flocculent precipitate
No. 5.....	Red	Red	Flocculent precipitate	Red	Flocculent precipitate
Remarks—No appreciable difference—Choice, No. 2.					
Compound Syrup of Stillingia (10% Glycerin).					
No. 1.....	Red	Red	Bulky, flocculent precipitate	Red	Bulky, flocculent precipitate
No. 2.....	Red	Red	Bulky, flocculent precipitate	Red	Bulky, flocculent precipitate
No. 3.....	Red	Red	Bulky, flocculent precipitate	Red	Bulky, flocculent precipitate
No. 4.....	Red	Red	Bulky, flocculent precipitate	Red	Bulky, flocculent precipitate
No. 5.....	Red	Red	Bulky, flocculent precipitate	Red	Bulky, flocculent precipitate
Remarks—No appreciable difference—Choice, No. 2.					

In sample No. 5 of the syrup of hypophosphites, syrup of ferrous chloride, and syrup of the phosphates of iron, quinine and strychnine, the "heavy" syrupy glucose was used in place of the solution of specific gravity 1.21.

All of the samples of solution of ferric hypophosphite produced gas and in sample No. 2 a sufficient amount to burst the bottle. This gas is due not to fermentation but to the oxidizing effect of the ferric salt in strong solution on the citrate in the presence of light. Difficulty was experienced in getting all of the iron salt into solution and the addition of more citrate seemed to cause greater subsequent precipitation. Samples in which the iron hypophosphite was cut from 165 Gm. per liter to 150 Gm. per liter showed less precipitation.

Samples of elixir of hypophosphites, compound elixir of vanillin, and mixture of rhubarb were made in the summer of 1919. At the end of six weeks there was no appreciable difference in appearance between the N. F. samples and those made by replacing glycerin by syrup or by water.

SUMMARY.

Invert sugar tends to lessen the amount of precipitation for a time. At the end of six months, the amount of precipitate was less in the samples containing invert sugar than in samples not containing it although at the end of twelve months there was not much difference in most cases.

These experiments go to show that glycerin is not necessary for the permanency of these preparations except in a few cases as in compound solution of hypophos-

phites and syrup of hypophosphites. The large amount of glycerin, as in elixir of calcium and sodium glycerophosphates and compound elixir of glycerophosphates, is objectionable because of the disagreeable taste which develops. On the other hand glycerin is preferred to syrup when the preparation contains a large percentage of acid or inorganic salt because sugar is so easily caramelized.

CHEMICAL RESEARCH DEPARTMENT,
PARKE, DAVIS & CO.,
DETROIT, MICHIGAN,
August 21, 1919.

ABSTRACT OF DISCUSSION.

MR. RAUBENHEIMER: While it is true that glycerin can be replaced to some extent, as Professor Ruddiman has reported, there are a great many preparations wherein it is absolutely necessary. The standards must be complied with, and the author has this in mind. The work done by him will, doubtless, prove of value in the revision of the standards.

PROTECTIVE OINTMENTS AGAINST MUSTARD GAS.*

BY JOHN M. WILLIAMS.

Mustard gas, dichlordiethylsulphide, is an intense vesicant as well as being very toxic when inhaled. It has a marked action upon the eyes, causing temporary blindness, and quickly produces intense hoarseness followed by inflammation of the lungs. It penetrates clothing, producing a flesh wound of much the same character as the burn from phosphorus.

Mustard gas is produced by passing dry, pure ethylene into sulphur chloride at a temperature maintained within very narrow limits. Of the manufacture I will not go into detail.

Mustard gas was first used by the Germans on the Ypres sector in July 1917, and proved a formidable weapon, and had the Germans been able to manufacture it then on such a large scale as the Allies were doing at the time of the Armistice, there is little doubt that the allied lines would have melted, with a different conclusion of the war.

The need for a protection against mustard gas is realized when you consider the terrible burning effect of the liquid or gas. A small drop of the liquid on the skin will cause a marked erythema within a few hours, followed by a large blister, and a sore that heals very slowly. Exposure to the vapor gives a similar result, the severity of the burn depending upon the concentration of the vapor and the length of the exposure.

In considering possible preventatives or curative agents, attention must be drawn to the fact that absolutely no immediate effect of exposure of the external skin to mustard gas can be noticed. This decreases the value of any possible curative agents, and to be efficacious must be applied shortly after exposure. Exhaustive investigations failed to find an effective curative agent, although washing the exposed parts with kerosene, or soap and water, within one minute would keep it from burning. If washed within one-half hour a redness would appear, but this treatment is impossible under field conditions.

* Read before Section on Practical Pharmacy and Dispensing, A. Ph. A., New York meeting, 1919.

Protection from mustard gas may be secured in at least three different ways:

a. A protective outside suit to be put on when exposure is anticipated.

b. Protective underclothing, to be worn continuously.

c. A protective ointment, to be applied to the skin when exposure is anticipated.

The latter is the one this paper will treat with although we will show how it was also made effective by the underclothing.

From the first it was recognized that the use of ointments had three fundamental disadvantages:

a. It would be impossible to protect the whole body by the use of ointment. Such a wholesale application might result fatally.

b. The ointment would be apt to rub off.

c. Only an impervious, unpleasant coating could protect against liquid drops of mustard gas.

The advantages are:

a. A small amount would supply a large number of men with protection.

b. Such an agent could be rapidly manufactured.

c. On certain *limited portions* of the body such protection must be used.

d. It could be used for horses, dogs and other animals.

At the outset it was agreed that an ointment to be satisfactory should possess the following properties to the greatest possible extent:

a. It should protect against "Mustard Gas."

b. It should give protection for 24 hours.

c. It should not be easily rubbed off.

d. It should in itself be non-irritating.

e. There should be no toxic or unpleasant effects from continued use.

f. It should retain a proper consistency under service conditions and give a proper coating at the temperature of the body.

g. It should be simple and rapid to manufacture. The raw materials required should be such as were available.

h. The cost should not be excessively great.

To determine if the ointments were satisfactory, a standard method of testing must be had. So exactly one-tenth of a mil of the ointment was rubbed over three square inches of the skin; after the ointment was applied no effort was made to protect it from rubbing off.

For exposure of gas to the skin an apparatus was prepared as follows: A test tube $4\frac{1}{2}$ inches by $\frac{1}{2}$ inch was placed inside a tube 5 by $\frac{3}{4}$ inches, and the inner tube separated from the outer by pieces of cork on the bottom, and at the sides. In the inner tube a piece of glass wool was placed about 2 inches from the top, and on this was dropped 1 mil of Mustard Gas. This inner tube was kept stoppered when not in use.

For rapidity in making a large number of exposures eight such tubes were attached in a row to a heavy strip of rubber.

In testing the ointments a blank burn was put on at the same time a burn was put on the skin covered with the ointment, and this burn was compared with the blank and a percent given taking the blank as 100 percent.

This was called the standard test, but ointments which gave good results were subjected to the more severe tests.

In order to make the study of possible ointment materials as systematic and thorough-going as possible, the first series of over 50 ointments was made up as follows: It was considered that each ointment consisted of two parts. First, there was the metallic soap or other solid material which was considered to give the protection, and second, there was the oil or liquid material which was worked up with the solid, and which probably gave permanence, etc., to the ointment. The latter was called the ointment base.

Bases of the following composition were prepared and made into ointments, using zinc stearate, zinc oleate, and zinc linoleate, respectively, as the chemical protection:

Base A.	Raw Linseed Oil	89%	Base E.	Lanolin (30% Water)	100%
	Wax	11%		(Neutral Wool Fat)	
B.	Liquid Petrolatum	90%	F.	Lanolin	98%
	Paraffin	10%		Gum Arabic	2%
C.	Olive Oil	89%	G.	Liquid Petrolatum	77%
	Wax	11%		Paraffin	14%
D.	Cocoanut Oil	95%		Tar	9%
	Paraffin	5%			

The results showed that Lanolin (Base E) gave the best result, and Liquid Petrolatum (Base B) the poorest. The others showed about the same degree of protection.

Direct comparisons were also made between zinc stearate, zinc oleate and zinc linoleate. Series were made consisting of three ointments made up with the same base, but each with a different soap. The result showed that the oleate and linoleate ointments are much better than the stearate.

The thing that showed out the strongest and might be of some pharmaceutical importance is that any ointment made up of vaseline or liquid petrolatum gives a higher percentage burns than the blanks.

Since the preliminary work indicated that lanolin followed by such oils as linseed, olive and cocoanut were best, ointments were prepared using these as the main constituents with slight modifications and additions of different chemicals.

The following ointments were prepared and tested:

No. 16	Zinc Oxide	25	On % of blank	No. 44	Magnesium Oxide	44	
	Linseed oil	25			Linseed Oil	43	
	Lanolin	50	37		Paraffin	1	
No. 31	Calcium Oxide	55			Base D	12	35
	Linseed Oil	22		No. 41	Manganese Rosinate	75	
	Lanolin	23	35		Base D	25	33

From the work done it was noted that the ointment prepared from an oxide with an oil appeared to give better results than the metallic soaps as ordinarily prepared.

The question of which oxide was best was then taken up, and over one hundred ointments of different proportions of CaO, ZnO, Bi_2O_3, MgO, oil and some base, generally lanolin or neutral wool fat, were used.

The results showed that calcium and zinc oxides gave the best results so a number of ointments of these two oxides were made and prepared.

The best ointments of these two classes were as follows:

No. 82	Calcium Oxide	40%	No. 66	Zinc Oxide	40%
	Linseed Oil	28		Linseed Oil	20
	Water	9		Lard	20
	Lanolin	21		Lanolin	20
	Wax	1			

The CaO ointment gave good results, while the amount of CaO in them appeared to be high, the effect on the skin was not harmful, this ointment being applied to the skin and tender parts of the body for two weeks without any injurious effect at all. But these ointments harden or "set" on exposure to air and on long standing, so that they would not be practical for field use.

The ZnO ointments gave the best results, and a series of ointments were prepared and tested; the four ingredients varied in different amounts in order to see if No. 66 could be improved either in its protective properties or in its physical properties.

The results obtained showed, when any very great change in formula is made, that every substance used has a definite function, and the percentage composition is the best.

The following ointment, No. 146, was recommended for field use:

No. 146	Zinc Oxide	45%
	Linseed Oil	30
	Lard	10
	Neutral Wool Fat	15

The physical properties of No. 146 are very good. It forms a smooth, even coating on the skin; sticks well enough not to rub off too easily on the clothing, and yet is not so sticky as to plaster down the hairs and be disagreeable. Its consistency is just about right to press readily from an ointment tube and to rub on the skin well. The change with temperature variation is not great. A tube was heated to 42° C for 12 hours without hardening of the ointment or separation of the oil. Another tube was kept in a freezing mixture at —10° C for several hours, and when removed the ointment could easily be pressed out and rubbed on the skin. Test tubes were filled to the top with ointment and left standing exposed to the air in order to see if the ointment tended to separate. After two weeks' time there was no sign of separation. A jar of No. 66 has been kept for a month and a half open to the air more or less every day, without apparent effect on the ointment, and the ointment has been used from day to day without noticeable change in consistency. The ointment contains nothing which could in any way injure the skin during constant use. The materials to make it are all plentiful and cheap except lanolin, but by using neutral wool fat this objection was overcome.

Neither the use of all lanolin nor of all lard gave as good results as part lanolin and part lard. This ointment has the best proportions and any attempt to improve or cheapen the product frequently impairs to a considerable extent the degree of protection against mustard gas. It has been found by experiments that slight and apparently negligible changes in the composition often seriously im-

paired the efficiency of the product. This fact cannot be too strongly emphasized, and exact adherence to the given directions were required.

The ointment was painty white, and for field use it had to be camouflaged, so we found that one percent burnt umber gave a very satisfactory color—a light brown tint—the one desired.

Many other materials were tried in ointments besides different stearates, oleates and linoleates. They were metallic resinates (these gave very good immediate results, but as a rule formed a very sticky mass on the skin which plastered down the hairs), aluminum chloride, ferric acetate, sodium carbonate, and sodium perborate, but without significant results. Among organic compounds chlorinating agents such as dichloramine and phenyliodide dichloride were used and also basic compounds such as oxamide, phthalamide and pyridine, all common oils, and a number of chlorinated oils. In no case were as good results consistently secured as when the regular ZnO ointment No. 146 was used.

At one time it was considered as a possibility that certain animal and vegetable oils alone rubbed on the skin might give as good protection as when made up in ointments with oxides and soaps. A number of oils were therefore tried, but none were found to give particularly good results as compared with the best ointments.

After these tests were made word was received from the A. E. F. laboratory that boiled linseed oil gave very good protection against mustard gas. Therefore another series of tests was made comparing boiled linseed oil with Ointment No. 66. The results showed the ointment gave the better protection. There were a number of drawbacks to using oil instead of an ointment. Repeated applications of boiled linseed oil gave a very unpleasant coating on the skin which slowly peeled off, causing a very marked degree of discomfort. None of the ointments made a coating even on repeated application for two weeks or more, making one or two applications a day.

The value of ointments for field use was subjected to some controversy, but Col. Bacon very emphatically stated that both American and Allied forces needed even partial protection such as was afforded by protective ointments. He stated that by far the greatest proportion of the casualties were caused by vapor burns and that the prevention of any reasonable percentage of these casualties would justify the use of a protective ointment.

It was found that this ointment gave more protection against high or medium concentrations than against long-continued exposure to uniformly low concentrations. But it was found that a large proportion of the men were exposed to high or medium concentrations and the use of the ointment would certainly prevent a considerable proportion of the casualties.

The directions were—rub on the ointment twice a day when exposure to mustard gas is anticipated. Do not apply to the whole body, but only to the crotch, in the arm pits, on the hands and feet, and exposed portions of the face.

This ointment gives good but not complete protection against mustard gas. It is a preventative only, and is of no value if applied after exposure to the gas.

The ointment proved its value a number of times. Men obliged to handle mustard gas who have made use of a protective coating of No. 146 ointment on their hands have been remarkably free from even slight mustard gas burns.

The manufacture and shell-filling plants have used this ointment with very satisfactory results. Men have worked over or taken apart machinery and apparatus containing liquid mustard gas with practically complete immunity from burns when they previously covered their hands and arms with ointment, put on protective gloves and subsequently washed off the ointment.

The ointments have also been used with distinct success in the impregnation of socks, underclothing and leather puttes and gloves, for mustard gas protection.

And this same ointment has also been found to give good protection against other powerful skin irritants which were going to be used when the Armistice was signed, and protective ointments were no longer needed.

SOME FUNDAMENTAL CONSIDERATIONS IN DISPENSING PHOTOGRAPHIC FORMULAS.*

BY IRWIN A. BECKER.

(A communication from the Chairman of the Sub-Committee on Photographic Formulas, A. Ph. A. Recipe Book.)

To the English reading and speaking photographic world the most potent single influence is the *British Journal of Photography*, together with its supplementary publication, "The British Journal Photographic Almanac, etc."

Naturally then, all weights and measures in these publications, when not expressed in terms of the metric system, are in terms of avoirdupois weights and "Imperial" fluid measure.

The very fact that a formula calls for a twenty or forty fluidounce quantity is a strong hint that the idea of the Imperial pint or quart suggested this amount, rather than some other influence. Also, photographic journals in this country (U. S.) largely quote from these publications, even to the extent of reprinting verbatim entire articles.

What mischief may be spread broadcast by this practice is nicely shown by an instance that happened during 1918.

The *British Journal of Photography* printed an elaborate exposition of the methods of reckoning percentage,—all, and properly so, based on avoirdupois weights and Imperial measure. These were generously copied or reprinted verbatim by various photographic publications in this country.

None, however, called attention to the essential difference in weight of the "Imperial" fluidounce of 437.5 grains and the U. S. liquid ounce of 454.6 grains, at ordinary conditions of temperature, pressure and humidity.

Therefore where a definite effect, or rate, or time limit is stated with any given formula of British origin, identical results can only be expected by actually duplicating the original formula. This can easily be accomplished in the absence of British measures, by weighing the fluids with avoirdupois weights, making due allowance, of course, for specific gravity where necessary. A general admonition is to pay close attention to cautions and precautions by manufacturers of, or dealers in, photographic materials.

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* Read before Section on Practical Pharmacy and Dispensing, A. Ph. A., New York meeting, 1919.

To properly advise and inform one's trade in photographic goods it is necessary to fully understand the difference between the ordinary or non-color plates or films, which are sensitive only to the ultra-violet, violet, and blue rays of the spectrum; and the "ortho" or "iso" chromatic plates and films which, in addition to the former, by the use of suitable dyes, are also sensitive to some of the blue-green, green, yellow-green, yellow and up to orange light, thereby rendering more correctly in monochrome (black and white) landscapes, seascapes and cloud effects; and lastly, plates sensitized, more or less, to all the colors, including the red, which make up white light, known as pan-chromatic or spectrum plates, these latter requiring special precautions in the dark room on account of their sensitivity to red light. Brochures dealing with the photography of colored objects, giving very valuable information on this subject, are published by the various makers of these materials and can be had for a nominal price or in some instances gratis. The qualities of the various printing papers should also be fully understood to properly advise in their use.

In photography, given the proper instrument for making the exposure, the proper exposure and the proper medium (plate or film) for recording the effects of the exposure, one of the most important procedures is the development of the latent image to produce a negative of proper quality. This is accomplished by a preparation called generally "the developer" composed of various ingredients possessed of certain properties and subserving definite functions. To properly compound and preserve this most important preparation of photography requires thorough understanding of its purpose and the functions of its several ingredients. The finished preparation should be kept in containers as full to the stopper or other closure as practical, the oxygen of the air and not the light does the harm.

A developer consists, *firstly*, of a reducing, so-called "developing" agent of from one to several ingredients; such as metol or its various substitutes, hydroquinine, pyro, etc., whose function is to attack the light-weakened silver compound and reduce it to the metallic state; *secondly*, of a preservative agent to prevent the reducing agent from being too rapidly destroyed by atmospheric and other non-photo-salt agencies; such as sodium sulphite and bisulphite, and potassium meta bisulphite, etc.; *thirdly*, an accelerating agent which may possess a direct synergic action on the developing agent, but hastens the reaction principally by softening the gelatin base of the sensitive salt; such as the fixed alkalies, alkaline carbonates, etc.; *fourthly*, the restraining agent, whose function is to prevent the reducing action on that portion of the sensitive silver salt not affected by the light of the image, the prevention of "chemical fog," as this action is called, such as bromide, iodide, etc. Those particularly interested in "chemical fog" are referred to an article under this title by J. I. Crabtree in the 1919 *American Annual of Photography*.

Different developing agents show varying degrees of stability to atmospheric conditions and a varying sensitivity toward the "restraining" influence of the "bromides," the restrainer generally used.

With each developing agent and the various other ingredients of the developer there exists a proportion of each which affords the maximum action, together with the greatest preserving, accelerating and restraining influence, without causing fog;

a developer in such condition is called "well balanced." The experienced photographer varies the proportion, within certain limits, of these several agents to produce specific effects. Consequently the importance of producing a preparation exactly as called for by the formula. The sequence of mixing the ingredients also has an important bearing on the properties and action of the consequent solution, because of conditions of solubility, and of new compounds, either desirable or undesirable, being formed. To enumerate these would take us too far afield photographically, and from the purpose of this paper.

The soda salts, however, require some attention. The preservatives usually are sodium sulphite or bisulphite, and potassium meta bisulphite, and the accelerators are the fixed alkalies, or more generally their carbonates. Thus we may have sodium sulphite anhydrous or crystalline, and sodium carbonate of several degrees of anhydration, and crystalline; both salts differing greatly in their content of active chemical, accordingly. It will readily be seen, therefore, that the proper salt the formula calls for, or its equivalent in any of the other forms, should be employed so that the relative concentration of absolute salt be not altered. For halving or doubling the relations of either or both of these salts must produce such different results as to destroy the confidence in either the compounder or the formula.

It is highly advisable to use the brands of these salts marketed as "photographic," since they are of the necessary degree of purity and have a definitely stated degree of anhydration. The proper compounding of developers for making prints is scarcely of lesser importance, perhaps, than for negatives since readily staining compounds must be avoided. The watchword in general is "cleanliness," to avoid contamination.

Of the various processes for modifying negatives or prints, the more important are "intensification" and "reduction." The pharmacist who would cater to tyros and amateurs should have available, and be able to compound correctly, the "mercury bichloride," and the "mercuric iodide" intensifiers. He should be able to recommend a reducer for,—*uniform reduction;* one for *reduction for increasing contrast,* that is, for reducing shadow details; and a reducer to *diminish contrast,* that is, for reduction of high lights. The ferricyanide-hypo reducer should be mixed either as needed, or, each ingredient may be dissolved separately and mixed when needed; when separately dissolved keeps for some time. Users should be informed, however, that after mixing, the preparation soon loses its yellow color, after which it is useless for its intended purpose. This latter information is usually not found, even, in photographic formularies.

An "equalization" process, a form of reduction and redevelopment, may be found in the 1919 *American Annual of Photography,* under the title "The equalization of values in negatives," by A. Brooker Klugh. Every work on a special branch of photography usually contains formulas germane to that particular branch.

For photographic formulas, in general, and for descriptions of new processes, the writer would recommend the *American Annual of Photography* and the *British Journal Almanac* as affording a wealth of such formulas, for a comparatively small outlay financially.

INSURANCE FOR DRUGGISTS.*

BY S. S. HUEBNER.[1]

Leading forms of insurance as a necessity to place the individual and his business on a sound basis—life insurance, property insurance indemnity insurance. The uses of life insurance as a means of capitalizing the earning capacity of life, as a means of borrowing, as a power for encouraging thrift and conserving earnings. Features designed to protect the druggist's vocation in property and indemnity insurance.

Insurance in its various forms has for its purpose the elimination of risk from our business affairs. Whereas little was said and written about insurance a decade ago, few subjects have received more emphasis in recent economic literature as a constructive force for betterment and for saneness in the business community. Heretofore, economics, the science of human industrial activity, has confined itself to a discussion of the problems connected with production, distribution, and consumption. Insurance constituted a perplexing problem to writers in economics since they found it difficult to place within any one of the aforementioned divisions. Insurance deserves a separate division in economic science, and it is to be hoped that before long economics will be discussed in our leading text-books from the fourfold standpoint of production, distribution, consumption, and *elimination of risk*.

LIFE INSURANCE AS AN ASSET.

Many, if not most of those present here, probably expect a discussion of property and liability insurance, to the exclusion of practically everything else. Instead, I shall first place greatest emphasis upon life insurance, because it is by far the most important. In every vocation, and druggists are not an exception, life insurance outranks all other forms of insurance as a real necessity and duty. This is particularly true in your vocation if I have been correctly informed. I have asked for advice from those who ought to know, and have been informed that druggists usually depend upon their own business until too old to work longer; that for most of them the accumulation of $15,000 represents a life's work, and that few retire on the income from outside investments; that not less than 75 percent of druggists carry financial obligations in the form of notes or mortgages; and that the average druggist requires from 7 to 15 years, under favorable conditions, to earn enough to free his business from debt, while, under unfavorable conditions, many carry these debts throughout their business life.

In presenting the cause of life insurance, I desire first to call attention to the fact that the most valuable asset in your vocation is the druggist himself. His life has a value that should be capitalized and conserved. It is high time that you should emphasize the value of your lives as contrasted with the value of mere property in your business. Certainly your personal value greatly exceeds the value of the material property in your business. Everywhere expression is being given to the fact that the productive lives in any community constitute

* Read before Section on Commercial Interests, A. Ph. A. New York meeting, 1919.

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by far the greatest econiomc value. Economic thought is rapidly turning to the incorporation of human values, and it is here that life insurance furnishes the only known method of capitalizing the income-producing value of a life.

In other words, life insurance is corporation finance applied to human values. From the moment the policy is signed and the premium paid an estate has been created. The policy is a callable, sinking fund bond issued upon the life of the policy holder. If Providence calls the policy holder the policy will be paid. In case Providence should not call the policy-holder, the policy, or bond, will also be paid at the time of maturity through the accumulation of its savings fund feature. Live or die, the payment of the bond is a certainty, so long as the premium is paid regularly. The value of the earning capacity of the life has been capitalized, and should premature death destroy this value the proceeds of the policy will act as a substitute for the former earning capacity of the deceased. At this point a few figures may indicate the extent to which this idea of human life capitalization is gaining ground. During 1917, $1,953,000 of life insurance was written every working hour in the year (assuming an eight-hour day); $32,545 every working-minute, and $542 every working-second.

Now why emphasize the value of a working life, and why capitalize it? In the overwhelming mass of cases a man's real value is to his dependents as the bread winner. We all pursue some occupation useful to our fellow men, it is true, but at bottom we serve them in our vocation in order to support a home. The home is the basis of society, and for nine men out of every ten it furnishes the motive for energy and progress. In other words, men have two businesses, one the vocation and the other the home. The first supports the second, and regard for the second furnishes vitality for the first. We must grasp the new economic concept of the family. As I have stated on other occasions we must view family economics in the same sense that we now apply economic thought to the conduct of business. The family is a man's first and most important business. It should be established and run as a business. It should be protected against bankruptcy. The death of the head of a family should no more bring about its impairment or dissolution than does the death of the head of a bank, a store, or a railroad. Every corporation respresents capitalized earning capacity and good will. Why, then, should not the business called a family be protected against the loss of the only real good will, namely, the earning capacity of the bread-winner? Why is it not fully as reasonable to protect the family, as to back every foreign bill of exchange with a marine insurance certificate? The voyage in the first instance is certainly much longer, surrounded with much greater hazards, and in case of ship-wreck the consequences infinitely more serious. Why should not the value of one's life be capitalized and protected when we are so careful about insuring our building and tangible goods, when obviously the value of the life is far the most important, in the great majority of instances? Is it not foolish for a man to put capital into himself and to build up his earning capacity, gradually from year to year, and then suddenly have all of this value snuffed out by death? From the standpoint of the family the capitalization of this value becomes a sacred duty. As Dr. Talmage once said in referring to a person who had this matter explained to him, and who nevertheless refused to adequately capitalize his earning capacity for the benefit of dependents: "He does not die, he absconds."

But life insurance also bears a definite relationship to business enterprise in that it furnishes the means to protect the payment of obligations in case of the premature death of the debtor. As already stated, probably 75 percent of druggists carry financial obligations in the form of notes or mortgages. Many also own homes financed under a mortage; while about 10 percent, I am informed, are regular borrowers from banks. Here life insurance affords a real opportunity. Every mortgage on a home or on the business should be hedged with a life insurance policy, the proceeds of which will retire the indebtedness and clear the property in case of the premature death of the debtor. Every building and loan association account should also be hedged with a life insurance policy. It takes time to save, and a life insurance policy protects against the contingency of the saving period being cut short by death before the saving fund, either under the mortgage or the building and loan association account, has reached a substantial figure. To regular borrowers from banks life insurance will also serve as a means of enhancing credit and of securing the most favorable rate of interest. Bankers are loud in their praise of life insurance. Recently a prominent banker called attention to his practice of asking for a statement of the amount of life insurance carried by the borrowers from his bank. When told by one of the borrowers that his insurance, although adequate, was all in favor of his family, this banker exclaimed: "that is all right; you have taken it and your act shows the man."

But, aside from its protective influence, life insurance should also be considered in its relation to saving. Not only does life insurance constitute compulsory thrift, but no other institution furnishes a more convenient method of saving. Life insurance is "compound interest in harness," and inculcates the habit of saving. In this connection let us remember that we do most things by habit, and saving is a habit. Life insurance may be compared to the conservation of by-products by the leading manufacturing concerns. The little odds and ends which otherwise would be frittered away are gradually accumulated at a very substantial rate of interest (4.9 percent in 1917) into a substantial sum at the end of a stipulated number of years.

Such systematic saving is especially to be encouraged in this country where rank speculation is so rampant. The words "guaranteed," "preferred," and "endorsed," carry with them a fascination in the United States as nowhere else. Every effort should be made to have the masses place their investments not directly, but indirectly, through the medium of large investment institutions. Such institutions have a threefold advantage: their investments are made through expert investment managers; their acts are regulated strictly by law; and they have furthermore the advantage of the law of average in such a way as to give the maximum return consistent with safety. By spreading investments widely, a loss in one direction is fully counterbalanced by a gain in another.

Of still greater importance is the fact that life insurance guarantees the saving period from being cut short by death. Let us never forget that it takes time to save and that a person is foolish to say: "I do not believe in life insurance, I believe in saving." What right has a man to say, "I will save $10,000 in twenty years?" In the first place he does not know that he will live twenty years. In fact, out of some 85,000 persons at the age of 30 over 15,000 will fail because of premature death. The value of life insurance in this respect may be illustrated

by an endowment policy of, say, $10,000, maturing at age 65, the average age of retirement. Such a policy represents a combination of decreasing term protection with an increasing savings fund. When the savings fund has reached $1,000 the protection has declined to $9,000. Should death occur early, when the savings portion is only $1,000 the $10,000 estate, nevertheless, exists because of the $9,000 of protection. When the savings fund reaches $5,000 the insurance protection has decreased correspondingly to $5,000, the two again amounting to $10,000 in case of death. Should the insured be fortunate enough to survive the full savings period (to age 65 under our assumption) the savings fund will have grown to $10,000, this amount being paid to the insured, while the insurance protection, now no longer needed, is reduced to zero.

But even assuming life and will power to save, what assurance is there that the saving can be retained through individual investment? Again, let us not forget that one-half of those who accumulate a decent competency by the time age 50 is reached, again lose the same before death. All these contingencies are overcome by relying upon life insurance because it furnishes a happy combination of sure saving and protection against the saving period being cut short. Live or die, an estate is guaranteed as long as the premiums are paid. Here again a few figures may serve to show how the saving concept in life insurance is gaining ground. During 1917, the accumulated reserve (savings fund) of 241 life insurance companies increased $160,000 every working hour of the year (assuming an 8-hour day), $2,700 every working minute, and $45 every working second.

FIRE INSURANCE—LIABILITY INSURANCE.

And now a few words with reference to property and liability protection. As regards fire insurance, the policy contract has been fairly standardized throughout the United States, and inquiry shows that the companies have no special form of policy, or of clauses, applicable to the property of druggists. The property is insured under the regular forms generally used in insuring stocks of merchandise, and the druggist's chief care should be in the selection of first-class indemnity, *i e.*, a company whose capital and surplus is indicative of financial strength.

The descriptive portion of the contract is practically the same as that used to insure any merchandise and store furniture and fixtures. This portion of the policy should enumerate fully (1) the various classes of property constituting a druggist's stock, being the property of the insured, or held in trust or on commission, or sold but not delivered, or for which the insured may be liable; and (2) the various classes of store furniture, fixtures, and utensils of every description as used in the business of the insured. As regards each of these two items it is customary to assign a separate valuation. Additional permits are also required where gasoline and other articles prohibited by the policy are kept on the premises. A careful reading of the policy by the insured is therefore essential to make certain that no avoidance of the contract exists in this respect. A special clause for permission to use electricity, for the obtaining of a certificate from the local underwriter's board showing the adequacy of the electrical equipment, and for notice to the board of any alteration in such equipment following the issuance of the certificate, is also required.

A so-called co-insurance clause is also required, the provision being to the

effect that the company shall not be liable for a greater proportion of any loss or damage to the property described in the policy than the sum insured bears to a designated percentage (usually 80 percent) of the actual cash value of the property insured. In other words, the owner is expected to insure his property to at least 80 percent of its value. If the insurance taken is less, a loss will be paid only in the proportion that the insurance taken bears to the insurance required. Probably no practice has received so much adverse criticism on the part of property owners. Yet plain justice requires that the practice be enforced. It is the Golden Rule in fire insurance. It is manifestly unfair, in view of the fact that the great mass of fire losses are small partial losses to permit a property owner to take only a small amount of insurance and yet have all his losses paid in full. Fire insurance premiums are a tax on the community, and like ordinary property taxes should be paid in proportion to the value of the properties involved. He who refuses to bear his just share of the community's fire premium tax should be willing to have his loss claim scaled proportionately, *i. e.*, the insured should receive only as he was willing to give.

Druggists' liability insurance should also commend itself to all druggists who desire to conduct their business with security and without worry. Reference is had to public liability insurance as distinguished from compensation insurance for employees which is now required by the law of practically every industrial State. Liability insurance has for its purpose the indemnification of the insured "against loss from liability imposed by law for damage on account of loss of life or bodily injuries suffered by any person or persons and resulting from any alleged civil malpractice, omission, error, or negligence in the practice of the insured's profession, or in the dispensing or sale of any drug, chemical, medicine, or pharmaceutical preparation, or other article regularly carried in stock by physicians or druggists, and not excepted in the Schedule, and occurring while this policy is in force; also against the cost of defense against any claims or suit based upon such civil malpractice, omission, error, or negligence, including the cost of any appeal to a court of last resort." No druggist can afford to go on the theory that errors resulting in injuries to customers will never occur, despite the utmost care in selecting his help. Even if we could assume that no errors would be made, no druggist can afford to remain unprotected against possible claims of unscrupulous persons. Where a suit is successfully prosecuted the recovery of damages for a single injury, if fatal, or totally disabling, may easily be so large, where the druggist's business is of ordinary size, as to cripple his financial standing. And even where the claim is unjust and the suit unsuccessful, the employment of counsel to defend is apt to be expensive in time and money. How much better it is to pay a definite premium of moderate size, and have an insurer protect the insured's interests by taking immediate charge of the case and by effecting an adjustment with the least delay and publicity. How much better it is to use insurance and to operate one's business on the basis of *certainty* instead of *uncertainty*.

Time limits forbid a detailed analysis of the contract, a copy of which may easily be obtained from any company. Suffice it to say that the contract is conspicuously free from onerous conditions. The limit of the company's liability is subject to agreement, but is usually $5,000 for injury or loss of life to one person; and, subject to the same limit for each person, the company's total liability for

any number of persons is customarily fixed at $10,000. But it is usually provided that the expenses incurred by the company in defending any suit, including the interest on any verdict or judgment, and any costs taxed against the insured, will be paid irrespective of the limits expressed above. The contract also contains certain provisions which safeguard the company against paying losses which are incurred under irregular conditions. Thus it is common to provide some such clause as the following: "The company shall not be liable for any alleged error or mistake—(1) caused by any employee unless such employee is classified in said Schedule and at the time of making the alleged error or mistake is on duty in the occupation under which he is classified; (2) caused by the Assured or any employee in prescribing any drug or medicine (as distinguished from an alleged error or mistake as defined herein), or caused by the intentional substitution of any drug or medicine for the drug or medicine ordered; (3) unless a demand or claim has been made on the Assured while this policy is in force or within six months after the termination or expiration thereof; (4) for or on account of any criminal prosecution of the Assured or any employee; (5) if the Assured or any employee shall have violated any law or ordinance in connection with any alleged error or mistake; (6) if the Assured or any employee was to any extent under the influence of any anaesthetics, intoxicants or narcotics."

Brief reference may also be made to the customary method of arriving at the premium on liability policies. Two items comprise the charge, *viz.*, (1) the store charge, covering one store and its proprietor, and (2) the employees whom the proprietor may decide to cover under the policy. The store charge depends upon the size of the policy, while the charge for employees (an annual rate varying in amount for different classes of employees, such as registered pharmacists or prescription clerks, assistant pharmacists or junior prescription clerks working under one or more registered pharmacists, relief clerks, salesmen, porters, and soda-water clerks) remains the same irrespective of the amount of the policy. The insurer is not required to have all employees covered, but if any are excluded, it follows that the company is not liable for any of their errors. But if the insurer has decided upon the classes of employees to be covered (the above mentioned employees are grouped in classes, a separate charge being assigned to each class) it is required that he must include all the employees of that class. If two or more stores are operated by one concern, the charge for employees remains the same, but the store charge is reduced, usually about 10 percent for two stores, 15 percent for three, etc., until a maximum reduction of 25 percent is reached.

BUYING FOR A RETAIL DRUG STORE.*

BY CHARLES W. HOLZHAUER.

The importance of right buying—general principles, factors and conditions to be considered.

How—Systematic methods of ordering and keeping stock. Inventories, record of purchases, order forms, etc., price information and cash discounts.

When—A brief outline of the best time to buy certain lines.

Where—Available markets, source of supply, jobbers, manufacturers, specialty houses, buying clubs, etc.

* Read before Section on Commercial Interests, A. Ph. A., New York meeting, 1919.

The question of buying for a retail drug store is of sufficient importance to be worthy of careful study by every pharmacist. We acknowledge at the outset that pharmacy is, of necessity, partly professional and partly commercial, hence time devoted to the science of buying wisely will be time well spent. The old saying that "Goods well bought are half sold" holds just as good in the drug business as in the department store. Too frequently no stock records, either mental or physical, are kept and when the supply of an article is exhausted a new supply of the same quantity is bought whether the time, as far as price is concerned, is favorable or not. Perhaps instead of fifty pounds, on account of market conditions, it might be better to buy ten, and, conversely, instead of fifty it might be better to buy one hundred. The pharmacist in many lines he carries is in direct competition with other merchants, and his purchases must be about right, if he is to meet competition successfully.

No absolutely definite rules can be laid down for every store. General principles together with business sense must guide. The character of the store, its clientele, its location with reference to available markets, the amount of capital at its disposal, the time elapsing between order and delivery, are all factors to be considered. Perhaps the subject may be covered best by considering it under separate heads, *i. e.*, What to Buy—When—Where—How Much—and What to Pay.

WHAT TO BUY.

If the store is in very truth a *drug* store, then this question is easily answered. The purchases will be only drugs, chemicals, pharmaceuticals, and sick room supplies. If, on the other hand, it is a drug store as these stores exist to-day, then its buying activities will be extended beyond the scope mentioned. And here it is pertinent to ask how far from the true drug field a store should go. There is a limit, as in all things, and yet the limit seems to be far and wide. It is a safe rule, I think, to confine the purchases to articles that have some relation, remote perhaps, to the general drug line. This would include soda water, through long association perhaps, or because in days long past CO_2 was made on the premises from marble dust and sulphuric acid, bristle goods, toilet articles, photographic supplies—for the pharmacist is versed in chemistry—candy, cigars—if any profit is derived therefrom—novelties, holiday and Easter goods, and other lines that suggest themselves to the individual store. Very often the question of what to buy depends upon the requirements of the customers who patronize the store. If they require certain goods it would seem to be good business for the pharmacist to supply them although not directly in his line. Such a case came to my attention this summer. During the summer of 1918 a store had repeated calls for bath caps and bathing shoes. The proprietor did not wish to run a shoe store and he sent his customers away without the goods. Very often this happened at night and his customers' wants were supplied by other drug stores. Reluctant to send his customers to his competitors, he put in a line of caps and shoes in 1919 and has done a profitable business in these goods without interfering with his regular business. Hence local conditions, customers' wants, etc., will regulate the extent to which the pharmacist will indulge in side lines. The middle ground is probably the best—not adhering strictly to pharmaceuticals—nor, on the other hand, carrying all the jimcracks of the 5 and 10 cent stores.

Whatever the purchases are, it is a sound rule to buy only good merchandise—goods the seller can stand back of. It will build business better than almost anything else and business that it is a pleasure to transact. This does not necessarily mean the most expensive goods for often goods of medium price are excellent value to the consumer, but goods of questionable value and utility—shoddy merchandise—should be strictly avoided. All reputable wholesalers and manufacturers stand back of their products and if the retailer buys of such houses—and they are the only kind to deal with—he can also stand back of his goods. We all know of a popular brand of insect powder that has a large sale and keeps on repeating year after year. I have an idea that the success of this brand is due to the package containing the unexpanded flower heads of Pyrethrum in their pure and unadulterated state. Good goods always pay.

What goods to buy for your store? You will receive additional light on this subject by noting what other stores are doing. I never visit a strange city without observing what the drug stores are selling. May I put in a plea for pharmaceutical meetings? The attendance often is slim and I think this may be due to the fact that the every-day problems of the drug store are not given sufficient prominence. And yet, even so, the man who attends these meetings and keeps his eyes open for what is going on will obtain new ideas for his store and what is to the point in this paper—he will find out what other pharmacists are buying and selling. I have received ideas at pharmaceutical meetings which have been worth dollars to me in hard cash.

WHEN TO BUY.

When to buy—need not detain us long. Regular goods will be bought daily from the source of supply. Special or seasonable lines, however, are usually ordered far in advance of their sale. Thus many glass factories go out of blast during the summer months and a sufficient supply of bottles should be ordered in the spring to carry until fall. Holiday candy and stationery lines are often shown in August and orders placed at that time. Market conditions, whether upward or declining, will suggest whether the time is propitious for the purchase of a quantity of a drug or chemical. I know of one store that laid in a large stock of chemicals at the beginning of the war—a very wise thing to have done—for we all know to what prices some chemicals soared. One man, remembering that phenol was closely associated with explosives, bought a large stock at a low price. Later he wasn't paying $1.00 a pound for his carbolic acid. An eye to market conditions as well as current events will have a bearing as to time of purchase of a given commodity. Before leaving this topic of when to buy—it is a good plan to order staple goods every day, that is for a store that is doing a fair volume of business and is close to its base of supplies. If items are allowed to accumulate on the want book it means a delay in receiving the goods and a possible loss of sale. Prompt ordering is a great help in keeping a stock complete.

WHERE TO BUY.

What sources of supply for drug store merchandise are available? There are so many sources that one is at a loss for the point of beginning. The general drug jobber, is, I suppose, the principal supply for most drug stores. The jobber carries a good stock, is usually close by, often in close touch with an individual business,

can make frequent and quick deliveries, extends credit with discount for prompt payment, and in many cases can furnish anything from strychnine to shoe polish. The jobber is, as the name implies, an intermediate and is a very useful link in the movement of goods from the maker to the consumer. His chief function, as a jobber, is the supplying of broken lots, and many items bought by the druggist must be purchased in small lots. Quite naturally he must be paid for the service rendered and receives a jobber's discount from the manufacturer.

The pharmaceutical manufacturer, as the name indicates, supplies U. S. P. and N. F. preparations besides hundreds of other items of various formulas. These concerns generally sell to anyone (of good credit) and often require a contract for a minimum amount of goods in a year. The price is also based upon quantity purchased, ranging from 40 percent off list prices on pharmaceuticals to—I don't know how much. These houses render a useful service to the pharmacist especially in supplying preparations of guaranteed standard that it is not practical for the individual pharmacist to make. Biological products, ampuls, etc., are part of their products. Many also sell household remedies under buyer's name in attractive packages. Branches in various parts of the country facilitate the quick delivery of goods, and there are very few corners of the country in which they are not prepared to render an efficient service.

Chemical houses make a specialty of furnishing chemicals. They are first hands and in a position to quote attractive prices. Their terms are usually thirty days with one or two percent for cash in ten days.

Buying clubs and drug syndicates. These organizations are composed of retailers banded together to purchase in quantity, and effect a saving in price for their members. They are stock companies in which each member owns a block of stock and receives an annual dividend. They sell to their members at a close margin of profit and prompt payment is required—usually weekly. Buying clubs have sprung up in many of our large cities and do a large volume of business. Their prime object is to supply goods at low cost, rather than pay large dividends on their capital stock.

Besides the jobber, manufacturer, and buying club, crude drug merchants are first hands in supplying crude drugs; oil concerns that specialize in essential oils; toilet goods and perfumery houses, houses that make a specialty of bristle goods, sponges and chamois; general importers, and jobbers that make proprietary remedies at a discount their main feature. Many proprietary remedy manufacturers also sell their product in quantity directly to anyone. The alert pharmacist no doubt avails himself of various sources of supply—each one has its advantage and fills a want.

There seeems to be a tendency, however, toward direct buying—reducing the number of hands through which an article passes from maker to consumer. The less handling, the lower will be the cost of an article, and where the quantity purchased is of fair size, this method would seem to have much to commend itself. The closer the retailer comes to first hands, the better price he can obtain.

HOW MUCH TO BUY.

The day has passed when druggists will buy a quantity of an unknown article merely upon the say so that it is to be advertised. Business methods and prin-

ciples are more and more becoming the guide for the pharmacist in his business dealings, and in no place are they more important than in considering the amount of goods to be purchased. "Turnover" is a frequent word in the journals. It is heard on every hand. To buy intelligently one must have facts before him, and no greater help can be had in ordering goods than a card record of the quantity purchased in the past. We keep such a record—entering every item on our invoices on a separate card—and it has been a very valuable aid in purchasing. An offer of free goods is made with the purchase of a gross of an article. Can we use a gross? The card record gives a pretty good idea. We note from our record that the sale of an article is falling off. We regulate our buying accordingly.

The time consumed in keeping up such a record is not more than an hour a day, in the average store, and it is time well spent.

But our question as to how much of a staple article we should buy is still unanswered. As a rule we think a two months' supply about as much as it is wise to purchase although, if the discount is sufficient, a six months' supply may not be too much. The more frequently goods are turned into cash and the money reinvested, the greater the profit at the end of the year. Here also the amount of capital at hand is a consideration. If it is just enough to do business with, then smaller purchases would be wiser, for there may come a time when cash in the bank is more desirable than a lot of goods in the cellar. While there is danger from overstocking, there is also danger from understocking. We are all forgetful. We sell the last of an article and do not put it upon the want book and miss a sale the next time that article is called for. If our stock is fairly liberal this is apt to happen less often. Nothing is more exasperating than to have to advise a customer that "we are just out of it."

WHAT PRICE TO PAY.

Not infrequently the question of price is not a question at all. A certain article must be had at once, for the patient is waiting for the prescription, the quantity needed is small and is obtained as quickly as possible from the nearest source of supply. The total cost is usually trifling and, while the invoice may be checked up later, the very smallness of the transaction precludes much argument as to price. Of course the pharmacist does not expect to pay exorbitant prices even for such purchases but on many small items quibbling as to price does not pay. The difference at best will be only a few cents.

It is in the buying of his regular stock where the element of time is not the most important factor that the pharmacist should consider well the price. What information can be obtained as to market prices? There are many sources.

One of the very best sources of price information and trend of the market is the salesman. He is posted about supply and demand in the lines he carries. While he is out to sell goods, if he is conscientious and has the interest of his customer at heart—as most have—he is a veritable reservoir of information. The friendship and goodwill of the traveling man is an asset to the retailer, particularly as to price tendencies.

The drug journals publish lists of quotations of drugs, chemicals, oils, etc., which give up-to-date information as to market prices. A weekly price sheet, with current prices quoted as well as a forecast of the future market, is also ob-

tainable. The daily commercial journals also carry quotations of many drug store items. Several of the drug journals publish a very full price list about twice a year. These books are very useful in the store, especially the information about proprietary preparations, size of package, cost, supposed retail price and name and address of the maker.

There are also goods the drug store will buy on which there are no quotations—such as tooth brushes, sponges, chamois, etc. Here the experience of the buyer, his knowledge of the goods, and the reliance he places in the firm with which he is doing business are the important elements. And it cannot be reiterated too often that good merchandise bought of reliable firms gives the best satisfaction all around—to the maker, retailer and consumer alike. We can elevate our calling by establishing the reputation of selling only first-class articles.

Finally, just a word as to order forms, receiving goods, checking up, and cash discount. All goods should be ordered on a regular form with all conditions about the order explicitly stated. This will avoid future disputes. A carbon copy should be kept of the order and filed in systematic fashion. It is surprising how often delivery may be had at the store if it is asked for and specified on the order. In these days of high freight rates this is a considerable item in the course of a year. It is often a good plan to state in the order that goods not supplied are not to be forwarded unless so directed. If this is not done, and the same item is reordered from another house, there may be a double quantity of the item supplied.

After the goods have been ordered and received we find it good practice to enter the items in a receiving book. This procedure gives accurate information in checking up quantity with order and in case of delayed or lost invoices gives an accurate record of what was received. The goods now received being checked and entered in the receiving book, the separate items are priced and put into stock. Although considerable work, we find it pays to mark most items with cost and selling price—the latter in plain figures. It is a great help at inventory time to have a cost price too. The invoice is now checked for price and extension and the bill passed for payment. And most firms allow a cash discount on the amount of the bill for prompt payment, and many pharmacists overlook this means of adding to their incomes. It always pays to take the cash discount, which ranges from one to five or more percent. If money is not at hand it may be borrowed from the bank, provided the pharmacist has established a banking connection. If he has conducted his business as he should and can show a statement of financial condition to his banker, and the statement shows a going business, he will have little trouble procuring a line of credit. This is good business, for the bank is often the business man's best friend. By all means take advantage of the cash discount, and, it may be added, most firms look with favor upon a man who pays promptly.

Give close attention to the purchasing department of the drug store. Buy wisely and intelligently, liberally yet cautiously, and pay promptly, and you will have started upon a policy that may reasonably be expected to bring its own reward.

REVIEW OF THE DRUG MARKET.*

BY HARRY B. FRENCH.

The Armistice, in the latter part of 1918, brought the war to a sudden, unexpected and very favorable conclusion. The business community was for some time thereafter at sea as to the immediate and more remote effects of the cessation of hostilities. All except necessary buying temporarily ceased and, for a time, there was an important reaction in prices. As time passed on, the situation was complicated by the political and economical agitation pursued by the so-called labor classes in Europe, both of the Central Empires and in the Allied Nations. Over a large portion of the continent there was an indisposition to work caused by the reaction from the excitement of war, the idleness in which a large portion of the population had lived for a long time past, and in certain portions, because of the mal-nutrition of the people. These conditions gave rise to fantastic and Utopian claims that demoralized the efforts at reconstruction.

This condition was accentuated by a lack of supplies of raw material in large sections of the territory, which made the resumption of work impossible. The reflex influence of the war and of the theories propounded abroad have had their effect in this country, but we may confidently rely upon the sober second thought of the American people to insist upon a readjustment that will take into consideration the interests of all parties, especially of the public, in the readjustment of industrial conditions. After a few months had passed, it was found that the immediate necessities of foreign buyers were so great and the demands for shipments both of food and manufactured products were so large, that industry resumed not only its normal course but it is now operating at the highest tension. This condition will continue so long as this foreign demand continues and the buyers are able to pay for shipments.

In this respect, however, the condition is becoming critical. The English Pound recently sold in this country at $\$4.12^1/_2$ against a normal price of $\$4.80$, and it is quite generally believed that the price will go lower. This means that on all purchases the buyer must pay about twenty percent advance in price. The exchange of other countries is even more demoralized. It is possible that foreign nations are not unwilling that this decline should take place, so that their nationals may be forced to restrict their purchasing. Thoughtful men of experience know that the present condition can be remedied only by efficiency, that is, increased productiveness on the part of individual workers, and economy, that is, the purchase of only so much as may be necessary for comfortable living. This truth is appreciated only in part by labor in the United States. The demand for shorter hours, and in some cases for work five days only a week, and the tendency in some directions to slackness in work, has perhaps a more potential influence upon advancing prices than increased cost of labor. In other words, if the increased cost of labor secured efficiency there would be much more probability of the present scale of wages being maintained for a much longer time in the future.

There is much talk of profiteering, but much of this so-called profiteering is made necessary by the increased cost of operation. It must always be remem-

* Read before Section on Commercial Interests, A. Ph. A., New York meeting, 1919.

bered, however, that the basic cost is that of labor and that this cost is not measured solely by the amount paid to a man for a day's work, but by his efficiency. The era of expansion is bound to continue so long as excessive issues of money remain in circulation. Some years ago the average per capita of circulation in the United States was about twenty dollars, now it is over fifty dollars. This will be remedied in the course of time by a gradual repayment of the national debts and the withdrawal of superfluous currency. Europe and the rest of the world cannot buy unless they sell, and as they are working under the pressure of necessity, we must expect that their purchases in the future will decidedly decrease, though perhaps not immediately, and that their production must necessarily increase. The reflex action of this improvement of conditions abroad will benefit this country by a reduction in the price of food and manufactured products.

Since the signing of the Armistice the general tendency of American crude drugs has been to greatly advance in price, and this tendency will continue for the next several months. Chemicals have a tendency to decline and European crude drugs will be obtainable at lower prices as soon as they can finance shipments and transportation can be arranged. It is true, however, that in many cases the goods they have to offer are old stock, which would seem to indicate that during the recent years of the War, the crops were not generally gathered.

PERMISSIVE PRICE MAINTENANCE.

The Trade Commission has reached the following conclusions relative to Price Maintenance and has accordingly addressed the Speaker of the House:

(1) That producers of identified goods should be protected in their intangible property right or good will.

(2) That the unlimited power both to fix and to enforce and maintain a resale price may not be made lawful with safety.

(3) That unrestrained price cutting is not in the public interest.

Bills now pending before the Congress may well be made to meet the difficulties of the situation if amended to provide for a review of the terms of resale contracts and a revision of resale prices by a disinterested agency.

Therefore, it is recommended that it be provided by law that if the manufacturer of an article produced and sold under competitive conditions desires to fix and maintain resale prices, he shall file with an agency designated by the Congress a description of such article, the contract of sale, and the price schedule which he proposes to maintain, and that the agency designated by the Congress be charged with the duty, either upon its own initiative or upon complaint of any dealer or consumer or other party in interest, to review the terms of such contract and to revise such prices and that any data and information needful for a determination be made available to such agency.

SIXTY-SEVENTH ANNUAL MEETING OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, NEW YORK CITY, AUGUST 26–30, 1919.

ABSTRACT OF THE MINUTES OF THE FIRST GENERAL SESSION.

The First General Session of the Sixty-Seventh Annual Meeting of the American Pharmaceutical Association was called to order by President Charles H. LaWall in the banquet hall of Hotel Pennsylvania, New York City, Tuesday afternoon, August 26, 1919, at 3.40 P.M.

After introductory and congratulatory remarks by President LaWall, Secretary William B. Day read a letter from Mayor John L. Hylan, welcoming the Association, and very cordially extending the hospitalities of the metropolis. A vote of thanks was tendered him.

Letters and telegrams were read from Messrs. Geo. F. Payne, Burton Cassaday, I. L. Lyons, E. A. Whittier, D. V. and Mrs. Whitney and from Mrs. Fletcher Howard.

Vice-President F. W. Nitardy presided while the president read his address, which was referred to a committee of the following members: Theodore J. Bradley, Geo. M. Beringer, L. C. Hopp, R. S. Lehman and R. A. Lyman. (The address and report of the committee thereon are printed in the September issue of the JOURNAL.)

Secretary Joseph W. England read the minutes of the Council.

On motion of W. C. Anderson, seconded by H. M. Whelpley, and a favorable vote, the minutes were approved.

Treasurer H. M. Whelpley presented a summary of his report and also a résumé of the Association's financial condition up to August 15, 1919. He stated that the total assets of the Association aggregated $100,000; in round numbers the funds of a permanent nature amount to $55,000; trust funds, $10,000, and current funds $35,000. The Association has quite largely invested in Liberty Bonds. The Treasurer stated that about 100 more members had been elected during this year than in any preceding, and that fewer members were in arrears than in any previous year. (The report of the Treasurer is printed in the August issue of the JOURNAL, pp. 654–667.)

The list of general and special committees was read and the Secretary requested that the respective chairmen present their reports at the Second General Session.

A recess of ten minutes was declared for the selection of a nominating committee. The following were named as members:

MEMBERS OF NOMINATING COMMITTEE.

Alabama	L. C. Lewis
Arkansas	W. R. Appleton and Frank Schachleiter
Colorado	F. E. Mortenson and F. W. Nitardy
Connecticut	B. E. Hockert
Delaware	H. K. Watson
District of Columbia	L. F. Kebler and S. L. Hilton
Florida	E. Berger
Georgia	A. M. Roehrig
Illinois	F. W. Metzger and C. H. Avery
Indiana	F. W. Meissner and E. W. May
Iowa	Gus. Scherling and E. O. Kagy
Kansas	L. E. Sayre
Louisiana	F. C. Godbold
Maryland	John F. Hancock and R. S. McKinney
Massachusetts	John G. Godding and T. J. Bradley
Michigan	W. M. Chase and W. L. Scoville
Minnesota	E. A. Brown and J. H. Biese
Missouri	S. Boehm and F. S. Berg
Nebraska	R. A. Lyman and V. J. Fitz-Simon
New Jersey	E. A. Sayre and C. W. Holzhauer
New York	W. L. DuBois and R. S. Lehman
North Carolina	E. V. Howell and E. V. Zoeller
North Dakota	Oscar Hallenberg

Ohio.....R. W. Terry and C. G. Merrell
Oklahoma.....W. R. Jarrett and C. V. Nichols
Oregon.....Geo. C. Blakeley
Pennsylvania.....J. A. Koch and J. L. Lemberger
South Carolina.....W. H. Ziegler and D. T. Riley
South Dakota.....F. L. Vilas
Tennessee.....W. R. White and E. A. Ruddiman
Texas.....J. M. Fletcher and E. G. Eberle
Utah.....John Culley
Vermont.....C. H. Skinner and W. B. Eastman
Virginia.....J. E. Jackson and B. E. Sigel
Washington.....C. W. Johnson
Wisconsin.....Edward Kremers and W. O. Richtmann
Cuba.....W. F. Ortiz

Members-at-large, appointed by the President: H. V. Arny, J. H. Beal, C. A. Mayo, G. M. Beringer, and H. M. Whelpley.

MEETING FOR CONFERRING THE JOSEPH P. REMINGTON HONOR MEDAL.

The First General Session was adjourned to meet at 8.15 P.M. On reconvening President Charles H. LaWall announced the purpose of the meeting to be the conferring of the Joseph P. Remington Honor Medal. (See September JOURNAL, pp. 702–706.) After this presentation, the First General Session was adjourned, and followed by a delightful entertainment program provided by the Local Committee.

SECOND GENERAL SESSION.

The Second General Session of the American Pharmaceutical Association was convened by President Charles H. LaWall at 8.30 P.M., August 28.

The minutes of preceding sessions were read and by motion, duly seconded, and voted on, approved.

REPORT OF THE NOMINATING COMMITTEE.

To the President and members of the American Pharmaceutical Association:

Your Committee organized with Caswell A. Mayo as chairman and C. W. Johnson as secretary. Nominations were at once proceeded with and the nominees are as follows:

For *President:* C. H. Packard, of Boston; F. W. Nitardy, of Brooklyn, and Leonard A. Seltzer, of Detroit.

For *First Vice-President:* Hugo H. Schaefer, of New York; C. B. Jordan, of Lafayette, Ind., and E. Fullerton Cook, of Philadelphia.

For *Second Vice-President:* Lyman F. Kebler, of Washington, D. C.; George C. Blakeley, the Dalles, Ore., and Charles E. Caspari, of St. Louis.

For *Third Vice-President:* W. P. Porterfield, of Fargo, N. D.; F. E. Mortenson, of Pueblo, Col., and Miss Zada Cooper, of Iowa City, Ia.

For *Members of the Council:* Theodore J. Bradley, of Boston; Harry B. Mason, Detroit; L. E. Sayre, Lawrence, Kan., Charles W. Holzhauer, Newark, N. J.; D. F. Jones, Watertown, S. D.; W. H. Ziegler, Charleston, S. C.; George M. Beringer, Camden, N. J.; John G. Godding, Boston, and Frederick J. Wulling, of Minneapolis.

(Signed) C. W. Johnson, Secretary.

Theodore J. Bradley asked permission to withdraw his name as nominee for the Council and that John Culley, of Ogden, Utah, be designated in his stead. The request was granted, and the latter was named as candidate.

The report of the Committee, as amended, was approved.

Other reports of Committees were then presented. (In these minutes only the action on the reports will be given; they will be printed under Committee Reports, hereafter.)

Report of Committee on International Pharmaceutical Nomenclature. Accepted.

Report of Committee on Compulsory Health Insurance. Accepted.

Report of Committee on Patents and Trade Marks. Accepted and resolutions approved. One of the resolutions endorsed a bill in Congress, providing for reorganization of the Patent

Office, separate from the Department of Interior, and the other, the creation of a Court of Patent Appeals.

Report of the Committee on Local Branches. Accepted.

Report of the Committee on William Procter, Jr., Monument Fund. Chairman John F. Hancock reported progress.

The report of the Committee on the Pharmaceutical Syllabus was presented by Geo. M. Beringer. Accepted.

Secretary Jeannot Hostmann, of the House of Delegates, read the minutes of these sessions in abstract. On motion of W. C. Anderson, seconded by S. L. Hilton, and a vote, the report was received and the recommendations adopted. (The minutes of the House of Delegates will be printed in a later issue of the JOURNAL.)

The Committee on the President's Address reported. (See September issue of the JOURNAL, pp. 701 and 702.) Vice-President F. W. Nitardy presided during these considerations.

It was stated that the report of the Committee on Physiological Testing would be transmitted to the Publication Committee.

The Committee on Time and Place, through Chairman T. J. Bradley, requested that the Association decide on the time of the next annual meeting. After considerable discussion in which argument for the meeting to be held about the usual time was presented, and also, of others, for holding the meeting during the week prior to the Pharmacopoeial Convention. The vote was decisive for the week beginning May 3, 1920.

Chairman Bradley then requested the Association to decide whether Richmond or Washington should be the convention city. The vote resulted in favor of Washington.

A report was presented by the Chairman of the Committee on the Status of Pharmacists in the Government Service. After presentation, and considerable discussion, W. C. Anderson moved that the Chairman be permitted to withdraw the report and that a report of the Committee be presented at the Final General Session. The motion received a second, and it was so voted.

Chairman L. F. Kebler stated that the report of the Committee on U. S. Pharmacopoeia would be mailed to the editor of the JOURNAL.

Chairman F. H. Freericks reported for the Committee on Model Pharmacy Law.

Mr. England moved and L. E. Sayre seconded the motion, that the report be received and referred to the Publication Committee; that a suitable number of reprints be made of the original Model Pharmacy Law and mimeograph copies of this report, to be submitted to each State Board of Pharmacy and each State Pharmaceutical Association.

George M. Beringer suggested that the Model Pharmacy Law should be published in distinct paragraphs.

The motion made was placed before the Association and carried.

Secretary J. W. England presented the minutes of the third and fourth sessions of the Council. They were separately considered and approved.

The Second General Session of the Association was then adjourned.

THIRD SESSION.

The Third General Session of the American Pharmaceutical Association was called to order by President Charles H. LaWall, Saturday, August 30, at 11 A.M.

The minutes of the previous session were read by Secretary William B. Day and approved by the Association.

Jeannot Hostmann presented the report of the Committee on Weights and Measures. He suggested that the report be referred to the Council, and it was so ordered.

Chairman Jacob Diner reported verbally for the Committee on Closer Affiliation of Pharmacists and Physicians. In his opinion, this Committee should be in part constituted by the delegates to the American Medical Association, and one or more of the members should be resident in or near the Convention City. He thought that a large part of the work contemplated for this Committee could be most effectively done before the Section on Pharmacology A. M. A.

Secretary William B. Day reported for the Committee on Membership. The result of the year's work had been very encouraging, he said; nearly 600 new members were added to the membership roll.

The report of the American Joint Committee on Horticultural Nomenclature was presented. An appropriation of $25 was recommended and referred to the Council.

The report of the Committee on the Status of Pharmacists in the Government Service was read by Chairman S. L. Hilton.

It was moved that the report be accepted and that reprints be made for distribution among members of Boards and Schools of Pharmacy. Carried.

The following resolution was presented by L. F. Kebler:

WHEREAS, the cost of living has greatly increased during the past few years and the purchasing value of the dollar has greatly decreased, and

WHEREAS, the Keating Commission is investigating the situation with a view of giving the Government employees relief by providing a living wage, therefore be it

RESOLVED, by the American Pharmaceutical Association assembled this 30th day of August, 1919, that the President of this Association immediately appoint a committee to confer with the Commission and to point out the needs relative to what fair salaries should be under existing conditions.

The resolutions were seconded by S. L. Hilton. Carried.

The President appointed L. F. Kebler, Lewis Flemer and Frank T. Stone as members of the Committee.

Frank Cain moved that this Association extend a vote of thanks to physicians, military men, health officers and others who have given their support to the bill for the establishment of a pharmaceutical corps in the Army. Carried.

Local Secretary Hugo H. Schaefer spoke of the high registration during the present convention, the attendance having been about six hundred. He was deeply appreciative of the work of the chairmen and members of the local committees, who had labored faithfully and successfully to make the New York meeting of the American Pharmaceutical Association a success.

That the members fully agreed with the Local Secretary was evidenced by the enthusiasm with which his remarks were received. A rising vote of thanks was tendered to all who had contributed to the program and entertainment features, the hospitalities and good fellowship which abounded. The preceding motion was made by E. L. Patch with a hearty second by John Culley, who asked that the hotel management and the retiring officers be included in the vote. Carried.

H. M. Whelpley stated that he was a member of a committee, appointed by the Council, to confer with the officers of the newly formed World War Veterans' Section relative to continued work in behalf of the soldier and sailor pharmacists. The speaker said that the Committee of which he was a member was to have held another session, but time did not permit, prior to adjournment of the Association. The officers had summarized the situation and made a request for two thousand dollars for carrying on the work during the year. Instead of looking ahead twelve months, he, individually, recommended that, with the approval of the Council and the Finance Committee, five hundred dollars be provided for carrying on the work of the Section. If at the end of three months the work is such that the Council feels justified in making further appropriations, this can be done.

Caswell A. Mayo moved that the recommendation made by H. M. Whelpley be referred to the Council, seconded by Hugo Kantrowitz. Carried.

It was requested that all members who knew of eligible pharmacists for this Section should advise the officers of their names. The lists prepared by schools and associates was commended, not only as of value at present, but for the future.

The minutes of the final session of the Council for 1918–1919 were read by Secretary J. W. England.

Chairman T. J. Bradley, of the Committee on the President's Address, moved that the Association reconsider its action in the matter of a referendum on an increase in dues, and that the question in all its bearings be referred to the newly created Executive Committee of the Council for investigation, and report to the Council for approval, and later, report its findings at the First General Session of the Association next year.

President C. H. LaWall concurred in the motion.

W. C. Anderson moved to reconsider the action of the Association whereby approval was given to a referendum vote. Seconded by Jeannot Hostmann. Carried.

Mr. Bradley, with a second, then renewed his motion, which was adopted by vote. The minutes of the Conncil, as amended, were then approved.

The minutes of the reorganization meeting of the Council were then read by Secretary J. W. England. Approved.

The officers-elect present were then introduced by Ex-President Caswell A. Mayo and installed by the retiring president, Charles H. LaWall. They are as follows:

President, L. E. Sayre, Lawrence, Kans.
Honorary President, A. B. Stevens, Escondido, Cal.
First Vice-President, Theodore J. Bradley, Boston, Mass.
Second Vice-President, Harry Whitehouse, Johnson City, Tenn.
Third Vice-President, E. Fullerton Cook, Philadelphia, Pa.
General Secretary, William B. Day, Chicago, Ill.
Treasurer, Henry M. Whelpley, St. Louis, Mo.
Reporter on the Progress of Pharmacy, H. V. Arny, New York, N. Y.
Editor of the Journal, E. G. Eberle, Philadelphia, Pa.
Local Secretary, Samuel L. Hilton, Washington, D. C.

The new members of the Council are: J. H. Beal, Urbana, Ill.; Charles H. LaWall, Philadelphia, Pa.; S. L. Hilton, Washington, D. C.

Mr. Mayo performed the duties assigned him in a happy manner. President LaWall thanked the Association for having honored him and pledged his further service. President Sayre was mindful of the duties assumed by him and asked for coöperation and advice from the members. He appreciated the honor conferred and was assured of the whole-hearted support of the officers.

The Final General Session of the Sixty-seventh Annual Convention of the American Pharmaceutical Association was then adjourned.

COUNCIL BUSINESS

COUNCIL MEETINGS 1918–1919.

The second session* of the Council of the American Pharmaceutical Association for 1918–19 was held at the Hotel Pennsylvania, New York, on Tuesday, August 26, 1919.

The meeting was called to order at 9.45 A.M., by Chairman Lewis C. Hopp.

Present: Messrs. H. V. Arny, G. M. Beringer, Charles E. Caspari, Wm. B. Day, E. G. Eberle, Frank R. Eldred, J. W. England, E. N. Gathercoal, John G. Godding, Samuel L. Hilton, Lewis C. Hopp, Hugo Kantrowitz, E. F. Kelly, J. A. Koch, C. H. LaWall, Caswell A. Mayo, Wortley F. Rudd, Clyde M. Snow, Dr. Francis E. Stewart, R. W. Terry, Dr. Henry M. Whelpley and Wm. R. White.

The reading of the minutes of the first session for 1918–19, held at the Congress Hotel, Chicago, on August 17, 1918, was, on motion, dispensed with.

Announcement was made of the passage of Motion No. 34 (Election of Members; applications Nos. 300 to 356 inclusive).

Applications for membership from Nos. 357 to 520 inclusive were presented and favorably acted upon. The list was as follows:

No. 357. Randall Horace Greeley, U. S. Marine Hosp., Chelsea, Mass., rec. by John G. Godding and Theo. J. Bradley.

No. 358. Paul Mondello, 7 Rockland St., Dedham, Mass., rec. by Theo. J. Bradley and Eliz. H. LaPierre.

No. 359. Joseph Martin Widmer, 4402a Gibson Ave., St. Louis, Mo., rec. by J. Merner Noble and Leslie E. Pritchard.

No. 360. Herman M. Cecil, 4149 Flad Ave., St. Louis, Mo., rec. by J. Merner Noble and Leslie E. Pritchard.

No. 361. George Raymond Byrnes, 4126 Flad Ave., St. Louis, Mo., rec. by Leslie E. Pritchard and J. Merner Noble.

No. 362. Edgar Eugene Craig, 1210a Hebert St., St. Louis, Mo., rec. by Leslie E. Pritchard and J. Merner Noble.

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* The first session (1918–1919) was held in Chicago, August 17, 1918.

No. 363. Herman A. Vogler, 4053 Lindell Blvd., St. Louis, Mo., rec. by H. M. Whelpley and J. Merner Noble.

No. 364. Raymond S. Webb, 4215 Westminster Pl., St. Louis, Mo., rec. by H. M. Whelpley and Frantz F. Berg.

No. 365. Paul Thomas Capps, 3046 Rolla Pl., St. Louis, Mo., rec. by H. M. Whelpley and Frantz F. Berg.

No. 366. John Whitehill, 3328 Chestnut St., Phila., Pa., rec. by Willard Graham and J. W. England.

No. 367. John M. Bauer, 1902 Payne Ave., Cleveland, O., rec. by A. L. Flandermeyer and Edward Spease.

No. 368. Charles Carroll Thome, 107 Walnut St., Berkeley, Norfolk, Va., rec. by L. Zembsch and Frank H. Freericks.

No. 369. Frederick James Austin, 343 Sixth Ave., Brooklyn, N. Y., rec. by C. DeJonge and F. W. Nitardy.

No. 370. Augustin Ortiz, 271 2nd Ave., E., Roselle, N. J., rec. by H. M. Whelpley and J. W. England.

No. 371. John F. McCambridge, Carlisle Courts, 14th & Columbia Rd., Washington, D. C., rec. by S. L. Hilton and Redmond Mayo.

No. 372. Thomas Leslie Stribling, 307 Main St., Seneca, S. C., rec. by D. T. Riley and E. G. Eberle.

No. 373. Leon Reiss, 806 Market St., Camden, N. J., rec. by Edward A. Wickham and Margaret Ritchie.

No. 374. William J. Downer, 229 Bedford Ave., Brooklyn, N. Y., rec. by Edward A. Wickham and Margaret Ritchie.

No. 375. Robert R. Gerstner, 63 W. 102nd St., New York, N. Y., rec. by Hugo H. Schaefer and H. V. Arny.

No. 376. Walter G. Garber, 946 Richmond St., Cincinnati, O., rec. by D. E. Murphy and Frank H. Freericks.

No. 377. F. H. Sleight, 2405 Mound Ave., Norwood, Ohio, rec. by D. E. Murphy and Frank H. Freericks.

No. 378. James Cherry Fausnaught, 306 Main St., Worcester, Mass., rec. by E. H. LaPierre and Theo. J. Bradley.

No. 379. Olive C. Gnose, Anaconda, Mont., rec. by Alex. F. Peterson and Chas. E. Mollett.

No. 380. Ida M. Sylvester, Anaconda, Mont., rec. by Alex. F. Peterson and Chas. E. Mollett.

No. 381. Leo David Steinberg, 639 Morton St., Dorchester, Mass., rec. by Theo. J. Bradley and John G. Godding.

No. 382. Winthrop Bancroft Osgood, Peter Bent Brigham Hosp., Boston, Mass., rec. by Theo. J. Bradley and John G. Godding.

No. 383. V. Caleagno, 729 Cauldwell Ave., New York, N. Y., rec. by J. Leon Lascoff and Hugo H. Schaefer.

No. 384. Herbert E. Haines, 120 Broadway, Room 1247, cr. Armour & Co., New York, N. Y., rec. by Hugo H. Schaefer and H. V. Arny.

No. 385. Alexander G. Murray, Bureau of Chemistry, U. S. Dept. of Agri., Washington, D. C., rec. by Frederick B. Power and L. F. Kebler.

No. 386. Carlos A. Moya, 22 1/2 Avenida de Italia, Havana, Cuba, rec. by J. G. Diaz and Jose P. Alacan.

No. 387. Jose Capote y Diaz, 342 Avenida de Maximo Gomez, Havana, Cuba, rec. by J. G. Diaz and Jose P. Alacan.

No. 388. Dilomeno Jimenez, P. Gomez, 63, Yaguajay, Prov. de Santa Clara, Cuba, rec. by J. G. Diaz and Jose P. Alacan.

No. 389. Armando J. Alacan, 17th St. bel. K. & L. Vedado, Havana, Cuba, rec. by J. G. Diaz and Jose P. Alacan.

No. 390. Charles G. Duggan, 1391a Goodfellow Ave., St. Louis, Mo., rec. by Frantz F. Berg and H. M. Whelpley.

No. 391. Paul F. Knecht, 349 Broad St., Newark, N. J., rec. by Edward A. Wickham and Margaret Ritchie.

No. 392. William J. Dewis, 293 Hamilton Ave., Paterson, N. J., rec. by Edward A. Wickham and Margaret Ritchie.
No. 393. Emil H. Borath, Nicollet, Minn., rec. by E. L. Newcomb and D. D. Turner.
No. 394. Alfred Sophus Rasmussen, Pequot, Minn., rec. by E. L. Newcomb and D. D. Turner.
No. 395. Walter Anderson, Kasson, Minn., rec. by E. L. Newcomb and D. D. Turner.
No. 396. Charles August Anderson, Litchfield, Minn., rec. by E. L. Newcomb and D. D. Turner.
No. 397. Henry C. Kruckeberg, 2630 E. 25th St., Minneapolis, Minn., rec. by E. L. Newcomb and D. D. Turner.
No. 398. John Harvey Charles Coleman, Sandstone, Minn., rec. by E. L. Newcomb and D. D. Turner.
No. 399. Robert T. Wincott, 1715 Portland Ave., Minneapolis, Minn., rec. by E. L. Newcomb and D. D. Turner.
No. 400. Aug. H. F. Grotefend, 1011 N. E. Main St., Minneapolis, Minn., rec. by E. L. Newcomb and D. D. Turner.
No. 401. Porter B. Remington, Spring Valley, Minn., rec. by E. L. Newcomb and D. D. Turner.
No. 402. Morris Alton Harris, 614 Azeele St., Tampa, Fla., rec. by M. M. Taylor and E. Berger.
No. 403. William Archibald Cunningham, 220 Hyde Park Ave., Apt. H., Tampa, Fla., rec. by Leon Hale and M. M. Taylor.
No. 404. E. G. Coe, cr. Stephens & Co., St. Augustine, Fla., rec. by D. W. Ramsaur and M. M. Taylor.
No. 405. Hugh F. Dickson, cr. Elbre's Pharmacy, No. 5, Miami, Fla., rec. by D. W. Ramsaur and M. M. Taylor.
No. 406. Wallace B. Parnell, Elbre's Drug Stores, Inc., W. Palm Beach, Fla., rec. by Roy N. Chelf and M. M. Taylor.
No. 407. Otto F. Franz, 102 W. Francis Ave., Tampa, Fla., rec. by Leon Hale and M. M. Taylor.
No. 408. George Francis Curry, Jr., 773 Rockdale Ave., New Bedford, Mass., rec. by John G. Godding and Theo. J. Bradley.
No. 409. Guy Coe Norton, 3323 N. 27th St., Tacoma, Wash., rec. by C. W. Johnson and Edith Hindman.
No. 410. William E. Burke, 608 S. Smith St., St. Paul, Minn., rec. by E. L. Newcomb and Wm. B. Day.
No. 411. Ethel Rasmussen, 2181 Doswell Ave., St. Paul, Minn. rec. by E. L. Newcomb and Wm. B. Day.
No. 412. Charles Wm. Walling, Slayton, Minn., rec. by E. L. Newcomb and Wm. B. Day.
No. 413. Enoch Sundholm, Clinton, Minn., rec. by E. L. Newcomb and Wm. B. Day.
No. 414. Francis Thomas Jamieson, 4759 14th Ave., N. E., Seattle, Wash., rec. by C. N. Johnson and F. Edith Hindman.
No. 415. Maria Ylagan Orosa, Univ. of Wash., College of Pharm., Seattle, Wash., rec. by C. W. Johnson and F. Edith Hindman.
No. 416. George Herbert Needham, 2608 Mayfair Ave., Seattle, Wash., rec. by C. W. Johnson and F. Edith Hindman.
No. 417. Eva Sabina Carr, 2112 East 47th St., Seattle, Wash., rec. by C. W. Johnson and F. Edith Hindman.
No. 418. Adolph Weinberger, 3001 Scoville Ave., Cleveland, Ohio, rec. by A. L. Flandermeyer and E. A. Spease.
No. 419. Joseph Schneider, 3700 Eastern Ave., Cincinnati, Ohio, rec. by D. E. Murphy and Frank H. Freericks.
No. 420. Fred J. Minstermann, 1119 E. McMillan St., Cincinnati, Ohio, rec. by D. E. Murphy and Frank H. Freericks.
No. 421. Henry C. Bruggaier, 11638 Detroit Ave., Cleveland, Ohio, rec. by A. L. Flandermeyer and Edward A. Spease.
No. 422. A. J. Eckstein, Buffalo Lake, Minn., rec. by E. L. Newcomb and Wm. B. Day.

No. 423. Walter B. Scott, Ray, N. D., rec. by H. L. Haussamen and Wm. B. Day.
No. 424. Joseph B. Bruce, Cor. Coffee & Main Sts., Greenville, S. C., rec. by D. T. Riley and E. G. Eberle.
No. 425. William Mutter, 53 Haledon Ave., Paterson, N. J., rec. by Edward A. Wickham and M. H. McNeill.
No. 426. Ermilinda M. Villamena, 204 E. 116th St., New York, N. Y., rec. by Edward A. Wickham and Margaret Ritchie.
No. 427. Philip Sundock, 586 Hendrix St., Brooklyn, N. Y., rec. by Edward A Wickham and D. Villamena.
No. 428. Joseph Albrecht, 1896 E. 75th St., Cleveland, Ohio, rec. by W. M. Fox and A. L. Flandermeyer.
No. 429. William Goggin Crockett, Baylor Univ., Dept. of Phar., Dallas, Tex., rec. by Jno. E. Jackson and W. F. Rudd.
No. 430. Clare Bernard Kime, Box Q, Univ. Sta., Seattle, Wash., rec. by C. W. Johnson and Edith Hindman.
No. 431. John Wilson Bryant, Hornersville, Mo., rec. by Potter and Schachleiter.
No. 432. Charles Ferdinand Falk, 602 First Ave., Two Harbors, Minn., rec. by E. L. Newcomb and Chas. H. Rogers.
No. 433. Arthur J. Yackel, Comfrey, Minn., rec. by E. L. Newcomb and Chas. H. Rogers.
No. 434. Emily Lucille Lyman, 120 W. Lincoln St., Fergus Falls, Minn., rec. by E. L. Newcomb and Chas. H. Rogers.
No. 435. Emil Erick Hallin, Parkers Prairie, Minn., rec. by E. L. Newcomb and Chas. H. Rogers.
No. 436. John W. Hollenitsch, Butterfield, Minn., rec. by E. L. Newcomb and Chas. H. Rogers.
No. 437. John Walter Cook, 108 W. Olive St., Pipestone, Minn., rec. by E. L. Newcomb and Chas. H. Rogers.
No. 438. A. Ernst Lofstrom, Litchfield, Minn., rec. by E. L. Newcomb and Chas. H. Rogers.
No. 439. Harold A. Tyrholm, New Richland, Minn., rec. by E. L. Newcomb and Chas. H. Rogers.
No. 440. Addison C. Douglass, 104 No. Main St., Kimball, Minn., rec. by E. L. Newcomb and Chas. H. Rogers.
No. 441. Henry H. Gregg, 4314½ Upton Ave., So. Minneapolis, Minn., rec. by E. L. Newcomb and Chas. H. Rogers.
No. 442. Urban Smith Livingston, 53 Main St., Newport, Vt., rec. by Theo. J. Bradley and John G. Godding.
No. 443. Richard D. Morton, Watertown, S. Dak., rec. by D. F. Jones and A. A. Zieske.
No. 444. James M. Stanley, Watertown, S. Dak., rec. by D. F. Jones and A. A. Zieske.
No. 445. John Henry McBrearty, Anderson St., No. 5, Pelzer, S. C., rec. by E. G. Eberle and J. W. England.
No. 446. Rozier L. Francis, 142 N. Sycamore St., Petersburg, Va., rec. by W. F. Rudd and Chas. F. Walker.
No. 447. W. T. Reeves, So. Boston, Va., rec. by C. F. Walker and W. F. Rudd.
No. 448. C. B. Traylor, 1000 E. Carey St., Richmond, Va., rec. by W. F. Rudd and C. F. Walker.
No. 449. Andrew J. Clark, Crozet, Va., rec. by C. F. Walker and W. F. Rudd.
No. 450. T. S. Wakefield, 7140 Madison St., Oak Park, Ill., rec. by Wm. Gray and Wm. B. Day.
No. 451. Daniel M. Kollen, 600 E. 169th St., New York, N. Y., rec. by Jos. L. Mays and Hugo H. Schaefer.
No. 452. Perry H. Clute, Big Stone City, S. Dak., rec. by D. F. Jones and Chas. H. Rogers.
No. 453. George L. Rogers, Main St., No. 40, Antwerp, N. Y., rec. by Geo. C. Diekman and Lewis Brown.
No. 454. Charles Carroll Hearn, 1295 Hancock St., Quincy, Mass., rec. by John G. Godding and Theo. J. Bradley.
No. 455. Ethel M. Leavitt, Milbank, S. Dak., rec. by D. F. Jones and Anton Hogstad, Jr.

No. 456. Francis Marion Greenwalt, St. Luke's Hosp., St. Paul, Minn., rec. by E. L. Newcomb and D. D. Turner.
No. 457. M. DeWitt Martin, Division St., Northfield, Minn., rec. by E. L. Newcomb and D. D. Turner.
No. 458. Benne Albert Baldowsky, Milaca, Minn.. rec. by E. L. Newcomb and D. D. Turner.
No. 459. Bertram Hanson, 3rd & Main Sts., Sauk Centre, Minn., rec. by E. L. Newcomb and D. D. Turner.
No. 460. John P. Olson, New London, Minn., rec. by E. L. Newcomb and D. D. Turner.
No. 461. John Jay Allen, Pine River, Minn., rec. by E. L. Newcomb and D. D. Turner.
No. 462. Roland T. Lakey, 271 Belvidere Ave., Detroit, Mich., rec. by E. L. Newcomb and Chas. H. Rogers.
No. 463. Charles Perry Neadle, 401 W. Lake St., Minneapolis, Minn., rec. by E. L. Newcomb D. D. Turner.
No. 464. Alfred Charles Blasing, Henderson, Minn., rec. by E. L. Newcomb and D. D. Turner.
No. 465. August Peterson, Big Lake, Minn., rec. by E. L. Newcomb and D. D. Turner.
No. 466. Marie A. Piesinger, New Prague, Minn., rec. by E. L. Newcomb and D. D. Turner.
No. 467. Emile J. Proulx, 416 Ave. C, Cloquet, Minn., rec. by E. L. Newcomb and D. D. Turner.
No. 468. C. J. Oscar Lauring, Roseau, Minn., rec. by E. L. Newcomb and D. D. Turner.
No. 469. Ned L. Larson, Atwater, Minn., rec. by E. L. Newcomb and D. D. Turner.
No. 470. John Mitchell Connell, 115 Freeman Ave., Luverne, Minn., rec. by E. L. Newcomb and D. D. Turner.
No. 471. Victor E. Lundholm, Warroad, Minn., rec. by E. L. Newcomb and D. D. Turner.
No. 472. Edwin Nordstrom, Sacred Heart, Minn., rec. by E. L. Newcomb and D. D. Turner.
No. 473. George W. Vanderhule, 410 Locust St., Yankton, S. Dak., rec. by E. L. Newcomb and Wm. B. Day.
No. 474. Absalom Kraft, Hooper, N. Dak., rec. by E. L. Newcomb and Wm. B. Day.
No. 475. George Decker, 128 St. Marks Pl., New York, N. Y., rec. by Hugo Kantrowitz and Hugo H. Schaefer.
No. 476. Charles West Parsons, 66 W. Broadway, New York, N. Y., rec. by Hugo Kantrowitz and Hugo H. Schaefer.
No. 477. George Niles Hoffman, 322 Wall St., Kingston, N. Y., rec. by Romaine Pierson and Hugo Kantrowitz.
No. 478. Paul L. Foster, 50 Union Sq., New York, N. Y., rec. by Robt. Gerstner and Hugo Kantrowitz.
No. 479. Max Brandt, 720 Third Ave., New York, N. Y., rec. by Hugo Kantrowitz and Hugo H. Schaefer.
No. 480. John J. Molloy, 623 Callowhill St., Phila., Pa., rec. by C. H. LaWall and Wm. B. Day.
No. 481. J. Richard Pryde, 2419 Venable St., Richmond, Va., rec. by C. F. Walker and Wm. B. Day.
No. 482. Henry Madison Oliver, Union City, Tenn., rec. by William R. White and E. A. Ruddiman.
No. 483. Guy Wilbur Wilcox, Cor. Broadway and 2nd Sts., Miller, S. Dak., rec. by D. P. Jones and A. A. Zieske.
No. 484. Francis Asbury Bryant, Herrick, S. Dak., rec. by D. P. Jones and A. A. Zieske.
No. 485. Henrick J. Peterson, Sturgis, S. Dak., rec. by D. P. Jones and A. A. Zieske.
No. 486. John C. Aldons, Henry, S. Dak., rec. by D. P. Jones and A. A. Zieske.
No. 487. Theodore D. Landsberger, Eden, S. Dak., rec. by D. P. Jones and A. A. Zieske.
No. 488. Rose Louise Holec, Granite Falls, Minn., rec. by E. L. Newcomb and Wm. B. Day.
No. 489. Herman LaFayette Berger, 1863 Second Ave., New York, N. Y., rec. by J. Leon Lascoff and Hugo H. Schaefer.
No. 490. William Renwick, 357 W. 115th St., New York, N. Y., rec. by Hugo H. Schaefer and J. Leon Lascoff.
No. 491. Isidore Malis, 608 Prospect Ave., New York, N. Y., rec. by Max Soskin and M. Zagat.

No. 492. Joseph Aquaro, 202 Spring St., New York, N. Y., rec. by Henry C. Louis and Hugo H. Schaefer.

No. 493. Sigmund Kopald, 700 Morris Park Ave., New York, N. Y., rec. by Mendel Zagat and Max Soskin.

No. 494. John Krack, 407 First Ave., New York, N. Y., rec. by Henry C. Louis and Hugo H. Schaefer.

No. 495. Nathan Williams Haynes, 3 Park Pl., New York City, N. Y., rec. by E. J. Kennedy and C. H. Stocking.

No. 496. William P. Harrison, 3901 Williamsburg Ave., Richmond, Va., rec. by Albert Bolenbaugh and W. F. Rudd.

No. 497. Samuel Y. Harris, Lombard & Poppleton Sts., Baltimore, Md., rec. by Daniel Base and E. F. Kelly.

No. 498. Thomas Ellsworth Ragland, 2809 Guilford Ave., Baltimore, Md., rec. by Daniel Base and E. F. Kelly.

No. 499. Lloyd Campbell Bird, 1716 Grove Ave., Richmond, Va., rec. by W. F. Rudd and A. L. I. Winne.

No. 500. Peter Diamond, 14 Wooster St., New York, N. Y., rec. by Hugo H. Schaefer and Jacob Diner.

No. 501. A Finstad, 111 N. Phillips Ave., Sioux Falls, S. Dak., rec. by E. L. Newcomb and Wm. B. Day.

No. 502. Samuel Baer Barnett, 399 Case St., Cor. Arkwright, St. Paul, Minn., rec. by E. L. Newcomb and Wm. B. Day.

No. 503. Charles Louis Funk, Red Lake Falls, Minn., rec. by E. L. Newcomb and Wm. B. Day.

No. 504. George H. Haywood, Osakis, Minn., rec. by E. L. Newcomb and Wm. B. Day.

No. 505. Charles J. Tenhoff, Balaton, Minn., rec. by E. L. Newcomb and D. D. Turner.

No. 506. Joseph D. Lascoff, 2556 7th Ave., New York, N. Y., rec. by J. Leon Lascoff and Hugo H. Schaefer.

No. 507. Ernest A. Peppmuller, 144 Columbus Ave., New York, N. Y., rec. by Curt P. Wimmer and Lewis N. Brown.

No. 508. Nathaniel Morton Chasau, 747 Second Ave., New York, N. Y., rec. by J. Leon Lascoff and Hugo H. Schaefer.

No. 509. Wilson B. Wardwell, Ellendale, Minn., rec. by E. L. Newcomb and Wm. B. Day.

No. 510. Bronislaw Prebol, 61 Third St. Elizabeth, N. J., rec. by Edward A. Wickham and Edward A. Sayre.

No. 511. Michael Uhorchok, 216 Washington St., Jersey City, N. J., rec. by James McCloskey and Hugo H. Schaefer.

No. 512. Tappen Fairchild, 70–76 Laight St., New York, N. Y., rec. by S. W. Fairchild and M. G. Foster.

No. 513. Elias W. Dusenberry, 70–76 Laight St., New York, N. Y., rec. by S. W. Fairchild and M. G. Foster.

No. 514. Frank J. Chamberlain, Colome, S. Dak., rec. by E. C. Bent and E. L. Newcomb.

No. 515. Charles Luther Guthrie, 130 South Ave., Petersburg, Va., rec. by E. G. Eberle and J. W. England.

No. 516. Ervin F. Kemp. 608 S. Dearborn St., Chicago, Ill., rec. by E. G. Eberle and Wm. B. Day.

No. 517. Nathaniel Nicolai, 150 Nassau St., New York, N. Y., rec. by Jeannot Hostmann and Hugo H. Schaefer.

No. 518. Hartie Lorenzo Coble, Centreville, Tenn., rec. by E. G. Eberle and J. W. England.

No. 519. Arthur Gold, 656 Newark Ave., Jersey City, N. J., rec. by Hugo Kantrowitz and E. G. Eberle.

No. 520. Walter Landrum Cubbedge, U. S. Marine Hosp., Savannah, Ga., rec. by A. M. Roehrig and Wm. B. Day.

The report of the Secretary of the Council was presented and approved. It was as follows:—

REPORT OF THE SECRETARY OF THE COUNCIL.

TO THE MEMBERS OF THE COUNCIL:

The Council for 1918–19 held one session at Chicago and has transacted its business by mail since.

Twenty-five Council Letters have been issued covering 56 pages, and 34 motions.

A synopsis of the motions of the Council is attached.

The applications for membership received to date inclusive number 519, the number for last year by the first session at Chicago was 395. The record for any one year was at Detroit (1914) and was 433.

The membership of the Council numbers 41, of which 17 are representatives of local branches.

There are 21 local branches.

The three members of the Council elected by mail in November last for 1919–20 were: Charles H. LaWall, Philadelphia; James H. Beal, Urbana, Ill.; and Samuel L. Hilton, Washington, D. C.

The Association has no more important work than the preparation and publication of the National Formulary and the time is rapidly approaching when the work of the fifth edition should be considered.

Chapter VII, Article II of the By-Laws of the Council provides that: "Whenever deemed advisable by the Council, it shall after the publication of each edition of the National Formulary appoint a committee of fifteen members from the general membership of the Association, which committee shall have charge of the Formulary, etc."

Furthermore, it is most desirable that the work of the fifth edition of the National Formulary proceed coincidentally with the work on the tenth decennial revision of the U. S. Pharmacopoeia, so that the forthcoming edition of both books shall be issued about the same time and become legal as of the same date.

It is, therefore, suggested that the Council select the Committee on National Formulary not later than the final session of the Council of this annual meeting.

J. W. ENGLAND, *Secretary.*

SYNOPSIS OF MOTIONS OF THE COUNCIL, 1918–19.

Motion No. 1. That the Council of the American Pharmaceutical Association, appreciating the seriousness of venereal diseases among the armed forces of the United States, and desirous of doing everything in its power to assist the Government in the war emergency, pledges the best efforts of the organization in coöperating with the program of the United States Public Health Service to reduce the venereal disease scourge, and that this Association recommend to the retail druggists of the United States that they discourage attempted self-treatment by refusing to sell to infected people who are carriers of venereal disease, patent proprietary remedies compounded for such self-treatment, and by directing such carriers to competent physicians, venereal clinics or boards of health for scientific care, so as to hasten their cure and reduce the danger of infection to civilians and to soldiers and sailors of the United States. Carried.

Motion No. 2. That the following be nominated as members of the Committee on Research to be elected by the Council: Messrs. H. V. Arny, G. M. Beringer, J. A. Koch, Henry Kraemer, Edward Kremers, C. H. LaWall, W. L. Scoville, A. B. Stevens and H. M. Whelpley. Carried.

Motion No. 3. That George D. Beal be nominated for the Committee on Research. Carried (Committee elected November 5, 1918).

Motion No. 4. That the recommendations of the Committee on Finance of September 23, 1918, contained in Council Letter No. 2, be adopted. Carried.

Motion No. 5. Election of members Nos. 1 to 37 inclusive. Carried.

Chairman Hopp announced the appointment of the following committees:

Committee on Conservation: Hugo H. Schaefer, *Chairman,* New York; Theo. J. Bradley, Boston; E. Fullerton Cook, Philadelphia; H. A. B. Dunning, Baltimore; and H. C. Fuller, Washington, D. C.

Advisory Committee for Sailor and Soldier Pharmacists: Frank H. Freericks, *Chairman*, Cincinnati; Clarence O. Bigelow, New York; Edward Spease, Cleveland; H. C. Christensen, Chicago; and Charles E. Caspari, St. Louis.

Committee on Drug Classification: Jacob Diner, *Chairman*, New York; E. F. Kelly, Baltimore; Dr. F. E. Stewart, Philadelphia; E. Von Hermann, Chicago, and L. A. Seltzer, Detroit.

Motion No. 6. That an additional appropriation of $150 be made for the budget item for the National Drug Trade Conference. Carried.

Motion No. 7. Election of members Nos. 38 to 43 inclusive. Carried.

Motion No. 8. That the Council approve of the proposed service to Soldier and Sailor Pharmacists, as set forth in the Circular Letter of the Advisory Committee of November 8th and that the Council hereby authorizes the committee to accept contributions for the purpose of carrying on its work; also, that the committee be authorized to name its own treasurer to have custody of and to disburse the funds so collected. Carried.

Motion No. 9. Election of members Nos. 44 to 55 inclusive. Carried.

Motion No. 10. That the Proposed Budget of Appropriations for 1919 be approved. Carried.

PROPOSED BUDGET OF APPROPRIATIONS FOR 1919.

Appropriation for General Expenses:

No. 1	Salaries	$6,400	
No. 2	Printing, Postage and Stationery	1,000	
No. 3	Clerical Expenses, Secretary's service	416	
No. 4	Miscellaneous Expenses	200	
No. 5	Stenographers	350	
No. 6	Traveling Expenses	200	
No. 7	Committee on Membership	250	
No. 8	Committee on Unofficial Standards	100	
No. 9	Year Book	3,000	
No. 10	Premium on Treasurer's Bond	50	
No. 11	National Drug Trade Conference	200	
No. 12	Section on Scientific Papers	25	
No. 13	Section on Education and Legislation	25	
No. 14	Section on Commercial Interests	25	
No. 15	Section on Practical Pharmacy and Dispensing	25	
No. 16	Section on Historical Pharmacy	25	
No. 17	Women's Section	50	
No. 18	National Syllabus Committee	25	
No. 19	Committee on Recipe Book	50	
			$12,416

Appropriations for Open Accounts:

No. 20	Journal		$6,250	
	(*a*) Publication	$5,000		
	(*b*) Clerical Expenses	800		
	(*c*) Postage and Stationery	300		
	(*d*) Freight, Drayage, Miscellaneous	150		
No. 21	National Formulary		1,000	
No. 22	Badges and Bars		50	
No. 23	Certificates		50	
				7,350
				$19,766

Motion No. 11. That the resignation of Hugo H. Schaefer as Secretary of the Scientific Section be accepted. Carried.

Motion No. 12. That the Budget of Appropriations for 1919 be amended to include an appropriation of $25 for expenses of Committee on Local Branches. Carried.

Motion No. 13. Election of members Nos. 56 to 69 inclusive. Carried.

Motion No. 14. That A. G. DuMez be elected as Secretary of Scientific Section, succeeding Hugo H. Schaefer, resigned. Carried.

Motion No. 15. That an additional appropriation of $300 be made to Item No. 4, Miscellaneous, of Budget of Appropriations. Carried.

Motion No. 16. That a vote of thanks be extended by the Council to Prof. John Uri Lloyd for his generous services in caring for material belonging to the Association, free of charge. Carried.

Motion No. 17. That the 67th annual meeting of the American Pharmaceutical Association be held during the week beginning August 25, 1919. Carried.

Motion No. 18. That an additional appropriation of $118.03 for printing, postage and stationery and for $86.06 for the JOURNAL be authorized. Carried.

Motion No. 19. Election of members 70 to 126 inclusive. Carried.

Motion No. 20. That the Ebert Prize Fund, now amounting to $1,200 and on deposit in the Boston Penny Savings Bank, be invested in the Fourth Liberty $4^1/_4\%$ Bonds, to be purchased in the market at current price. Carried.

Motion No. 21. That no paper nor address at Section meetings be permitted to occupy more than ten minutes, except by unanimous consent, that discussion be limited to not over five minutes for each participant and that no permission be permitted to speak twice upon a given subject except by unanimous consent. Withdrawn, as the by-laws of the Association (Chapter X, Article II) and of the Scientific Section (Section X) cover the subject matter of the motion.

Motion No. 22. That the General Secretary be authorized to dispose of certain Association property, etc. Carried.

Motion No. 23. Election of members Nos. 127 to 145 inclusive. Carried.

Motion No. 24. That copies of the Proceedings of the A. Ph. A. be presented to the National Association Boards of Pharmacy. Carried.

Motion No. 25. That the General Secretary retain 20 copies of bound Year Books, I to V, and that as soon as conditions permit, sets of these five volumes be sent to the leading foreign pharmaceutical journals with the compliments of the American Pharmaceutical Association. Carried.

Motion No. 26. Election of members Nos. 146 to 159 inclusive. Carried.

Motion No. 27. That the Program for the 1919 Annual Meeting as finally revised be approved. Carried.

Motion No. 28. Election of members Nos. 160 to 196 inclusive. Carried.

Motion No. 29. Election of members Nos. 197 to 219 inclusive. Carried.

Motion No. 30. That the Council authorizes the Advisory Committee for Soldier and Sailor Pharmacists to invite all pharmacists serving as Soldiers, Sailors or Marines, during the World War, either honorably discharged or now continuing in the Service, to become members of the American Pharmaceutical Association, and that in recognition of their services the Council appropriate, out of the general funds of the Association, an amount sufficient to pay the annual dues for the first year of $4.00 for each applicant to membership, it being understood that the new members who are exempted from the payment of dues for the first year shall not receive either the JOURNAL or Year Book unless they care to pay for them.

Motion No. 31. That the Council approve the proposal to organize at the New York 1919 Annual Meeting, by proper amendment to the by-laws of the Association, a Section of World War Veterans, on condition that sufficient interest be shown by the applications for membership in the Association of the pharmacists who have served in the World War as Soldiers, Sailors or Marines, with the view of organizing such a Section and with the understanding that such a Section be authorized to adopt and have its own by-laws, subject to the Constitution and by-laws of the Association.

Motion No. 32. Election of members Nos. 213, 214 and 220 to 270 inclusive. Carried.

Motion No. 33. Election of members Nos. 271 to 299 inclusive. Carried

Motion No. 34. Election of members Nos. 300 to 356 inclusive. Carried.

The Report of the Committee on Publication was presented by Chairman England, as follows:

TO THE MEMBERS OF THE COUNCIL:

The Committee on Publication submits the following report:—

Expenditures for the Journal: The expenditures for the JOURNAL in 1918 for publication, etc., were $6,382.06, which with the editor's salary totalled $10,132.06; the total cost of the previous year was $9,782.61 ($6,282.61 + $3,500), an increase of $339.45.

Receipts of the Journal: The receipts of the Journal in 1918 from advertisements, etc., were $5,408.45, and for 1917 were $6,000.73, a decrease of $592.28. The receipts for 1919 to August 1 show an increase of $589.11, or equivalent, if continued, to about $1,000 for the year.

Net cost of the Journal: In 1918 the total cost of the Journal (including salaries) was $10,132.06, and the total receipts were $5,408.45, making a net cost of $4,723.61. In 1917 the net cost was $3,781.88, or an increase for 1918 of $941.73, the increased cost being due chiefly to increased printing costs and decreased advertising receipts. In other words, there were in 1918 over 2,700 members in the Association, and the Journal for 1918 cost the Association, practically, only $1.75 per member.

Printing of Journal for 1919: The printing of the JOURNAL for 1919 was continued with the Eschenbach Printing Company of Easton, Pa., on October 1, 1918, which company asked 20 percent advance by reason of the greatly increased cost of labor, paper, presswork, etc., but we compromised on the basis of about 10 percent. The service rendered by this company has continued to be satisfactory.

Year Book for 1917 (Vol. 6): The contract for printing the Year Book for 1917 was awarded to the Eschenbach Printing Company of Easton, Pa., on October 9, 1918, under the terms and conditions covering the 1916 Year Book, Vol. V, subject to Government regulations which required the use of 50 lb. M. F. paper instead of 60 lb., as heretofore, and the price therein subject to an increase of 20 percent. The advance asked was fair and reasonable and unavoidable by reason of rapidly advancing costs in labor, paper, binding cartons, etc. The book was distributed in July, 1919.

The 1917 Year Book cost $3,575.98, including postage and expressage, etc., which with the salary of the Reporter on the Progress of Pharmacy ($600) totaled $4,175.98. The 1916 Year Book cost $2,950.81 including postage and expressage, which with the salary of the Reporter on the Progress of Pharmacy ($600), totaled $3,550.81, an increased cost of $625.17, or about 17 percent for the 1917 issue.

On the basis of 2,700 members, the Year Book for 1917 cost the Association, practically, only $1.55 per member per year. The Year Book contains about one-half as many reading pages as the JOURNAL, the increased relative cost being due chiefly to the fact that the Year Book carries no advertisements.

The JOURNAL and the Year Book, therefore, cost the Association, practically, but $3.30 per member per year.

National Formulary: During 1918, 3,257 copies of the N. F. IV were sold, yielding $4,410.47. The stock on June 1, 1919, was 545 books (191 muslin, 197 buckram and 157 interleaved). The total sales up to July 1, 1919, have been 26,850, the first copy having been sold on July 25, 1916. The General Secretary will present in his annual report a statement of the distribution of the book and the Treasurer, in his report, a statement of the receipts and expenditures.

In the publication of the JOURNAL, the Year Book and the National Formulary, the American Pharmaceutical Association is presenting the result of detailed research work that is of incalculable value, not only to the profession of pharmacy, but also, if indirectly, to the professions of medicine and chemistry, and it is doing this at an exceedingly reasonable cost to the Association, as the figures given above show.

It seems to your Committee on Publication that the time has now come when the Association should go a step further. The Association has an exceedingly able committee on the A. Ph. A. Recipe Book. Up to September, 1917, the Committee has published in the JOURNAL for criticism and suggestions, some 642 valuable formulas; and doubtless the Committee has many other formulas in reserve unpublished.

Your Committee on Publication would, therefore, suggest that the American Pharmaceutical Association publish these formulas and others, if necessary, in book form at an early date, so that pharmacists may have the formulas in a readily available form for use. We do not

believe that the expense would be prohibitory; indeed such a volume could be made the source of profit to the Association.

If not inconsistent with the purposes of the work of the Committee on Unofficial Standards, it might be desirable to include in the receipt book as Part II, unofficial standards, not only for drugs, but also for materials that enter into the formulas of the book, and in such case, it might be desirable, also, to name the book "Unofficial Formulas and Standards," instead of Recipe Book, to which latter title there has been some objection.

If the Association decides to publish the book, we recommend (1) that the title of the Committee on Recipe Book be changed to Committee on Unofficial Formulas, (2) that the Committee on Unofficial Formulas and the Committee on Standards be requested to prepare copy for the book, and (3) that the Council be authorized, through its Committee on Publication, to have the book printed and to fix its selling price.

J. W. ENGLAND, *Chairman.*

On motion of G. M. Beringer, seconded by S. L. Hilton, the report was received and the recommendations of the Committee on Publication were directed to be considered seriatum; as a substitute motion it was moved by W. B. Day and seconded by H. M. Whelpley, that the report be received and action on the recommendation be deferred until after the Report of the Committee on Recipe Book had been presented and adopted.

The Report of the Editor of the JOURNAL was presented by Editor Eberle as follows:

TO THE MEMBERS OF THE COUNCIL:

I respectfully submit herewith my report for 1918 as Editor of the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION and Advertising Manager.

The entering of the United States into the world war not only increased the expenses of 1918 but induced some patrons of the JOURNAL to discontinue their advertising. It was possible to hold the expenses down to $6,402.31 for the year, that is, only $119.70 above that of 1917, because of our favorable publication contract, which terminated with the December issue of 1918. We did not fare so well with our receipts from advertising; these were reduced to $4,647.24, or the equivalent of about three pages less per issue of the year. In this connection it may not be out of place to report that our receipts from this source to date for 1919 have increased in about the same proportion. Our subscriptions have also slightly increased.

The receipts from advertising amounted to $4,647.24; from subscriptions and single copies, $309.50; from reprints, $259.75; type cuts, $4.05; total receipts, $5,220.54. By consulting the report of the Treasurer you will find that he credits the receipts with $5,408.45; this difference is due to a remittance of December 31, 1917, of $187.91, which reached him January, 1918, hence by him credited to that month and year.

Our expenses totaled $6,402.31, of which $548.45 was for clerical expense; $152.29 for office postage; $139.10 for engravings; $5,482.06 for publishing and mailing the JOURNAL and reprints; $3.80 for expressage; $20.00 for binding of JOURNALS, and $56.61 for stationery and office supplies. The Treasurer's report charges us with $6,382.06; this difference is due to the fact that most of our expense bills are rendered on the first of the month for the preceding month, and the Treasurer enters voucher checks when bills are paid, hence most of the items for December, 1917, are charged by him against 1918, and the December items of 1918 will appear in his report for 1919.

It is hardly necessary to make a comparative statement for 1917 and 1918 relative to expenses. As stated, the difference is only $119.70, and practically all for an increased number of reprints; some of it is due to a higher letter postage; office expenses were less.

The Editor renders a monthly statement to the Publication Committee. The remittances of the JOURNAL are made payable to the Association and receipt of these is acknowledged by the Treasurer to the JOURNAL. Publication costs are paid direct to the publishers; other expenses are paid by the Editor, bills are sent to the Secretary and voucher-checked by the Treasurer, after approval by the Chairman of the Finance Committee. Duplicate copies of all transactions, monthly reports, remittance letters, itemized and scheduled accounts are submitted with this report. Considering the conditions of 1918, your reporter is confident you will agree with him that a very good showing has been made.

As indicated, our contract with the Eschenbach Printing Company terminated with the December issue of 1918, as the publishers were unwilling to renew the contract on the same

basis. After considerable correspondence by the Editor with the publishers in a number of cities the Publication Committee decided to ask for bids on publishing the JOURNAL, designating that a lighter weight paper than heretofore be used. The bids ranged from about ten percent advance on the former cost to upwards of twenty percent. Of the former two competitors were close bidders, one of them the present publishers. After careful consideration of these two bids by the Publication Committee it was decided to again contract with the Eschenbach Printing Company.

After consultation with the Chairman of the Publication Committee your Advertising Manager entered into an agreement with Mr. Max I. Barth, 171 Madison Ave., New York City, to solicit advertising in New York City and immediate vicinity, on a commission basis. His commissions so far this year, 1919, have amounted to $103.75. As a result of his work and the coöperation of the office some new advertising has been secured, and it is hoped that this arrangement and a continuation thereof will be approved by you.

It may be stated that while our publication costs have been increased, our receipts so far have also been larger, the latter proportionately exceeding the former; indications are that this relation will continue throughout the present year.

The JOURNAL coöperates with the Membership Committee, and doubtless is an aid in the securing of new members.

It is suggested to the Local Branches of the A. Ph. A. that many of the papers read before the Sections, and printed in the JOURNAL, should be made subjects of discussion at their monthly meetings. The same is true relative to other contributions appearing in our publication. A number of papers have been contributed by members of the Council on Pharmacy and Chemistry of the American Medical Association, being reports of investigations supported by a grant from the Therapeutic Research Committee; others have been received from the Laboratory of the American Medical Association, and each month, for a year or more, a contribution from the Pharmacognosy Laboratory, Bureau of Chemistry, U. S. Department of Agriculture, has been printed, and to these contributors the Editor desires to express his thanks. It is hoped that the work on the A. Ph. A. Recipe Book will be continued, so that another important service may be rendered pharmacy and pharmacists by the American Pharmaceutical Association.

The value of the JOURNAL can be extended by making more and greater use of it, and the income augmented by increasing the number of its advertising pages. All members may share in these promotions and in the benefits derived.

The Editor is thankful to the officers of the Association and members of the Publication Committee for their assistance and encouragement, and grateful to the membership for the many considerations they have shown him. He hopes that his work has your approval, with an assurance that you will continue to coöperate with him in making the JOURNAL a better and more valuable asset of the Association.

Respectfully submitted,

E. G. EBERLE, *Editor of Journal.*

On motion the report was accepted.

The Report of the Treasurer was presented by Treasurer Whelpley. It contained a number of recommendations, the disposition of which were as follows:

(1) That the Ebert Prize be limited to $25 until the Ebert Fund amounts to $1,500. Withdrawn.

(2) That the Treasurer be authorized to transfer a sum not exceeding $15,000 from the checking account in the International Bank of St. Louis to the Boston Penny Savings Bank. Carried.

(3) That the Rules of Finance be so amended that provision be made for the auditing of the account of the Treasurer by a professional auditor. Changed to require that the Committee on Finance and the Committee on Audit be authorized to engage annually a public accountant to audit the accounts of the Treasurer.

(4) That the U. S. Liberty Bonds of $50 to $100 denominations now on hand be held for the present as coupon bonds. Adopted.

(5) That the Treasurer be authorized to make further purchases of United States Bonds as the money accumulates in the treasury in sufficient amount to justify such investments. Adopted.

(6) That the Treasurer be authorized to sell the Ebert jewelry and turn the proceeds into the Ebert Legacy Fund. Adopted.

(7) That the Rice Memorial Fund be incorporated with the Endowment Fund. Adopted.

(8) That the College Fund be merged with the Endowment Fund. Adopted.

On motion of Charles E. Caspari, seconded by C. H. LaWall, it was directed that the Treasurer's bond be increased to $25,000.

On motion of W. B. Day, seconded by W. R. White, it was directed that the appropriation for the Year Book in the Budget of Appropriations for the year 1919, be increased $600.

The Report of the Committee on Research was presented by Chairman Arny, as follows:

REPORT OF COMMITTEE ON RESEARCH.

TO THE MEMBERS OF THE COUNCIL:

The Committee on Research authorized at the Chicago meeting as a permanent committee of the Council was formally elected by the Council during the latter days of 1918. The names of the ten members are as follows: Messrs. Arny, LaWall, Kremers, Koch, Kraemer, Beringer, Scoville, Stevens, Whelpley and George D. Beal.

The Committee transacted its business during 1919 by means of five bulletins, as copy of which is handed in with this for the purpose of filing. In addition to these bulletins the Committee held a meeting on the morning of August 25th, at which the following members were present: Messrs. Beringer, Koch, Kremers, LaWall, Scoville and Arny. This report has been submitted to those unable to be present at the meeting and those approving of the results of the deliberations have appended their names to this report.

The main duty for which the Committee was created was to recommend to the Council the name or names of the person or persons to whom the grant from the American Pharmaceutical Research Fund be awarded; announcement of such award having been published in the July and August numbers of drug, medical and chemical journals; these announcements bringing to the chairman four applications for the grant, which by authority of the Committee was placed this year at $240. After careful consideration of the applications the following conclusions were reached:

1. That we recommend to the Council that the grant this year be made as one appropriation.

2. That the grant this year (1919–1920) be made to George Denton Beal for a continuation of his work on anthraquinone drugs in collaboration with Vernon L. Harnack.

3. That the three other applications, which were of highly attractive character, be kept on file for further consideration when the fund is available if the work proposed be deferred until that time.

4. That this recommendation be respectfully submitted to the Council for action.

During the year considerable discussion was devoted to the proposed institute for drug research that is being considered by the American Chemical Society. As your Committee was not in agreement on the matter and as the proposition is still in intangible form your Committee has no specific recommendations to make in the matter at this time.

Your Committee regrets to announce the resignation of Professor A. B. Stevens because of his retirement from pharmaceutical activities. Professor Stevens' letter is presented with this report for action by the Council and is being so transmitted with the deep regrets of your Committee.

In closing, attention should be called to the fact that by the terms of creation of your Committee, the terms of two of its members expire in 1919: Messrs. Whelpley and Beal. A third vacancy will occur if Professor Stevens' resignation is accepted. So an election to fill such vacancies will be in order during this New York meeting.

Respectfully submitted,

H. V. ARNY, *Chairman.*

CHARLES H. LAWALL.	EDWARD KREMERS.
HENRY KRAEMER.	J. A. KOCH.
GEORGE M. BERINGER.	H. M. WHELPLEY.

The report was received and the recommendations made were disposed of, as follows:

(1) That the Council "grant" this year be made as one appropriation. Adopted.

(2) That the "grant" this year (1919–1920) be made to Dr. George Denton Beal. Adopted.

(3) That the three other applications be kept on file for further consideration when the fund is available if the work proposed be deferred until that time. Adopted.

On motion of W. R. White, seconded by H. M. Whelpley, the report was adopted as a whole.

On motion of H. V. Arny, seconded by G. M. Beringer, the resignation of Prof. A. B. Stevens from the Committee was accepted with deep regret and expressions of appreciation for services rendered.

George M. Beringer proposed the following names for honorary membership in the American Pharmaceutical Association:

(1) Prof. Leon Guignard, Honorary President of Ecole de pharmacie, Paris, France.

(2) Prof. Eugene Collin, Chemist, Central Laboratory for the Repression of Frauds, Paris, France.

(3) Prof. Emile Bourquelot, Paris School of Pharmacy, Paris, France.

(4) J. H. Maiden, Director of the Botanical Garden, New South Wales, Sydney, Australia.

(5) Wm. Kirkby, M. Sc., President of British Pharmaceutical Conference, Manchester, England.

(6) Sir William Glyn-Jones, Secretary of Pharmaceutical Society of Great Britain, London, England.

On motion of C. H. LaWall, seconded by E. G. Eberle, the nominees were unanimously elected.

Adjourned until Wednesday, August 27, 1919, at 7.30 P.M.

J. W. ENGLAND, *Secretary.*

REPORT OF THE SOLDIER AND SAILOR ADVISORY COMMITTEE TO THE AMERICAN PHARMACEUTICAL ASSOCIATION.

To the Members of the Council:

Your Committee was appointed in November by Chairman Hopp of the Council, and immediately took up its work. A tentative program or outline of the intended scope of its work was agreed upon by correspondence, in order that the Committee become immediately active, and such tentative program of activity was confirmed and augmented at a meeting held in Cincinnati, late in December, which was attended by Messrs. C. O. Bigelow, H. C. Christensen, Edward Spease, H. M. Whelpley and Frank H. Freericks; Dr. C. E. Caspari being prevented from attending because of illness. The work of the Committee has been very extensive along many different lines. The assistance and encouragement which it received, and the service in one form or another which it was able to render, and all of the incidents connected therewith, might well be the contents of a good sized book, and this report will be only a condensed statement, it being in mind also that the effort of the Association must largely speak for itself.

THE SCOPE OF OUR WORK.

It being the duty of the Committee to help wherever it might be necessary to re-establish men who entered the service out of pharmacy, we decided that our first task would be to learn of positions, partnership and store openings, to which the men might be referred. As a part of this work, it was thought to be of importance that ready means of Reciprocal Registration be provided, and that attention be given toward facilitating college education wherever desired and needed. Only after arranging for these essential preliminaries might we reasonably expect to render service, and not until then get in touch with the men whom we were to serve. It was our task on the one hand to learn from the fifty thousand retail pharmacists of the country what opportunities, if any, they had to offer the returning men, and on the other hand to get in touch with the approximately ten thousand men in the service, so that they might learn of the opportunities so offered them. We realized almost immediately that an Expense Fund would be essential, and that our helpfulness would largely depend upon the size of our expense fund. Council authorized the Committee to accept contributions toward such a fund, and Dr. H. M. Whelpley

kindly consented to act as the Committee Treasurer. At this point it might be mentioned that on August 1st, the total contributions received by the Committee amounted to $2,084.70, its total disbursements to $1,379.83, leaving on hand $703.87, out of which some subsequent disbursements have been made. Doubtless Treasurer Whelpley will make the list of contributors a part of his report, or otherwise it can be made a part of the final report of this Committee.

FINDING THE OPPORTUNITIES.

We are greatly indebted to the Pharmaceutical Press for editorial comment, and to both the Pharmaceutical Press and wholesale drug houses for the publication and distribution of a questionnaire to be filled out by the retail drug trade. Almost without exception the Pharmaceutical Press gave us page space publication, and through the wholesale drug houses we were able to distribute fifty thousand pieces of circular matter. Subsequently, through the coöperation of State Associations and State Boards of Pharmacy we distributed another thirty thousand questionnaire cards. The net result of the publicity work placed the Committee in touch with nearly three thousand positions, store and partnership openings, and enabled it to approach the other and real part of its work with some show of confidence, and has permitted that every request for assistance had satisfying attention. Through this publicity we are even now constantly coming in touch with new positions and new opportunities. We feel deeply indebted to the pharmaceutical journals, to the wholesale drug houses, to the State Boards of Pharmacy and to the State Associations for the help they have given us.

REFERRING OPPORTUNITIES.

Becoming satisfied within two weeks after commencing our work that we would be able with the generous support of retail pharmacists in all sections of the country to offer real service to the returning men, we took up the task of coming in touch with them, and there met with many disappointments and difficult problems. How to reach the ten thousand men in whom we were interested and who were in all parts of this and foreign countries, presented more than an ordinary undertaking. Naturally we turned to the various Government departments and to the various organizations engaged in war activities. To all we said that we wanted to reach the ten thousand pharmacists in the Army and the Navy, to let them know that the A. Ph. A. would be helpful in re-establishing them, and, with but few exceptions, none seemed prepared to help us. The various Government departments either could offer no suggestion, or thought that aid should properly be given us through some other department or bureau. Our first real help for this part of the work came from the Knights of Columbus, who seemed to grasp the situation and posted bulletins in all the camps and in all of their buildings in the country. Subsequently we also received some aid along like lines from one of the Government bureaus concerned with the re-employment of men, but it continued to be apparent that we were reaching only a small part of the men in whom we were interestd. After trying again and again in every different direction we finally turned once more to the Secretary of War and the Secretary of the Navy, stating our disappointment because of almost total lack of assistance from any of the Government departments and bureaus. In the end this last effort gave us the publicity which we needed both in the Army and in the Navy. In the Army we were fortunate early in April to secure the special interest of Colonel Arthur Woods, assistant to the Secretary of War, and his assistant, Capt. C. B. Hammond. Through them we secured the further assistance of the War Camp Community Service and the Knights of Columbus. The War Department, through General March, issued a special War Department circular and had it distributed to all Army units, and in one form or another brought to the attention of all who continued in the service from some time in April. Through them special attention was called to the work of the American Pharmaceutical Association in a booklet entitled, "Where Do We Go From Here," which was handed to every man who received his discharge commencing with late in April or early in May. The War Department also issued a news item from Washington to the press of the country, calling attention to the work of the A. Ph. A., and this was published in many of the large newspapers. In the Army also we secured publicity in the various camp publications and in the *Stars and Stripes*, a newspaper circulating among expeditionary forces overseas. In the Navy, commencing with April, we secured the help of the Bureau of Medicine and Surgery, and finally the help of the Bureau of Navigation, which resulted in the publication of a circular letter to all ships and stations requesting commanding officers to bring our work to the attention of their

men, and we have reason to believe that this was very generally done, the circular either being posted aboard or being read to the men assembled. Thus we at last secured the much needed publicity, and while doubtless thousands of men out of pharmacy had their discharge from the service before they could have notice of the work of this committee, it fortunately mattered little, because the men having early discharges were least in need of any service that we might render. As a result of our various publicity endeavors we have come in touch with about twenty-five hundred men out of pharmacy in or about to leave the service. We have been able to refer about eight hundred to positions, stores and partnership openings, and about four hundred have been advised and aided in connection with pharmaceutical education and college opportunities. We conservatively estimate that the work of the Committee has included the writing of from four to five thousand personal letters and circular matter running into many thousands of pieces.

RECIPROCAL REGISTRATION.

It was anticipated, as already mentioned, that much good might be done by our Committee in providing ready and, where need be, special means of reciprocal registration for the men honorably discharged. This part of the Committee work was put under the direction of Mr. H. C. Christensen, and it has been of great value and assistance to the men, and will continue to be so for some months to come. The several State Boards of Pharmacy were asked to allow as a special concession that pharmacists registered in one state having an honorable discharge be permitted unrestricted right of registration in their respective states. Almost without exception the State Boards of Pharmacy have coöperated in this work to the fullest extent, and only three or possibly four of the State Boards, largely because of legal restrictions, have been unable to grant a full measure of coöperation. Through the work of the sub-committee, pharmacists leaving service and finding better opportunity in new states have secured reciprocal registration in nearly every one of the states, and in that connection in every case special concessions have been made these men through the National Association of State Boards of Pharmacy. This part of our report would not be complete if we failed to mention that, in a spirit of real helpfulness and coöperation, the Ohio State Board of Pharmacy and the Pennsylvania State Board of Pharmacy were instrumental in securing law amendment so that they might grant the right of unrestricted registration to all soldier and sailor pharmacists registered in other states.

COLLEGE OPPORTUNITIES.

The Committee very early in its work concluded that much good might be done by advocating college work and by securing special inducements for men without college education to seek it upon their discharge. Prof. Edward Spease accepted the chairmanship of a sub-committee to take up this line of work. The active coöperation of the colleges of pharmacy was sought and in many instances heartily given. Lack of time and constantly changing conditions did not permit the adoption of any definite plan, but it is certain that none of the young men will need to go without a college education because they lack funds, and it is certain also that every college and school of pharmacy is taking a special interest in the men who have been in service. The work of the Committee in connection with college opportunities has more directly been centered in finding drug store employment where the men might hope to cover their expense while attending college. Of course, we fully recognize that it would be better if entire time and undivided attention could be given to college work, but often the financial condition of the student does not permit this, and it is a source of great satisfaction that hundreds of young men, because of the special interest and coöperation of many of the colleges of pharmacy, have and will find drug store employment where they can secure a college education. Again we want to express deep appreciation for the interest which many of the Colleges have taken in the work of the Committee.

WORLD WAR VETERANS SECTION.

Your Committee early in June decided to submit to Council the feasibility of creating within the Association a World War Veterans Section, and extending, toward that end, an invitation to every soldier, sailor and marine pharmacist, to become a member of the Association without dues for the first year. After most thorough deliberation on the part of Council, the proposal of your Committee was approved by it. Unfortunately after approval by Council, time did not permit prior to this meeting, that the offer of the Association be brought to the

attention of the pharmacists of the country and particularly to those who have been in the service, as it was planned to do. We have endeavored to reach the men with whom we have been in touch, but we discovered that many hundreds of them have changed addresses and cannot thus be reached. Nevertheless, we hope during the convention to submit sufficient applications for membership to prove to all that the offer of membership will be appreciated, and that the creation of a Section of World War Veterans is meeting with hearty response. Just a few words on the subject of a World War Veterans Section—what it will mean and what it may hope to accomplish. There are approximately ten thousand men out of the ranks of pharmacy who have been in the service. These men apart from their common interest in pharmacy and in its progress are bound together by ties of sentiment, which logically calls for an organization peculiarly their own within pharmacy. Where, if such an organization ought to exist, can it find better place, better environment, than within the folds of the American Pharmaceutical Association? A wonderful organization this can be, and will be, for the progress of pharmacy and for the influence of public good as it is concerned with pharmacy. A body of men, who, because of special service rendered, will often need only to ask in order to receive, what pharmacy ought to have. A body of men which through its several members in all sections and communities throughout the country can bring the need of pharmacy to the attention of their fellow veterans in all other walks of life. A body of men who from practical experience know what Army and Navy welfare requires in pharmaceutical service, and who because of their practical experience can demand of Congress that pharmacy receive the recognition in Army and Navy that it ought to have. A body of men which if brought to its proper numerical strength supported by the high ideals and aims of the American Pharmaceutical Association will be influential enough, will be strong enough, to bring American pharmacy into its own. A body of men who under proper leadership, where its members rendered pharmaceutical service, may even hope eventually to secure for them the remuneration which they ought to have had for such work while in the Service.

OUR WORK AS A WHOLE TO DATE.

The work of the Committee is not completed. Daily we receive many communications asking for advice and assistance in the line of our work. Lack of funds has prevented the employment of a sufficient clerical force to properly distribute and systematize the work, so that it would not be more or less of a burden on Committee members, but we are glad to say that we have been able to cope with the demands made upon us, and that in some manner we mean to finish the task. It may now with fairness be claimed that the creation, appointment and work of this Committee has been justified by its experience. We do not believe that any pharmacist who was in the Service would have been in need, or would have been at a loss in some manner to find employment or place, but we know that a great many more have readily found employment or place because of this Committee. We do know that millions of American citizens have learned of the unselfish activities of the American Pharmaceutical Association who otherwise would not have known of it. What is far more important, and a fact beyond doubt, is, that men out of pharmacy, called into the service of their country, stationed in all parts of the world, had the joy and the satisfaction while far away from home, in strange and often discomforting surroundings of knowing that the American Pharmaceutical Association was thinking about them and their future welfare when they returned home. One need only to visualize the young men out of pharmacy in far off Siberia, Macedonia, Germany, Belgium, France, those on board ship on the coast of Dalmatia, France, England, in the North Sea, on the waters of all parts of the globe, and wherever else the soldiers and sailors of our country are and have been, to appreciate what it must have meant to read an Army order, Navy order, or to read a bulletin, showing that the A. Ph. A. had them in mind. Many a letter testifies to the heart touch that this gave. With it all just a word to the credit of American pharmacy. It was the only class interest among all of the many classes which reached out to the men from its ranks, and said to them, we are looking for you—we have a place for you, when you come marching home.

Respectfully submitted,

C. O. BIGELOW,
C. E. CASPARI,
H. C. CHRISTENSEN,
EDW. SPEASE,
FRANK H. FREERICKS, *Chairman*.

NEW YORK
August 26, 1919.

MINUTES OF THE MEETING OF THE WORLD WAR VETERANS SECTION OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

A meeting of the members of the American Pharmaceutical Association and other pharmacists who served in the world war was called by Mr. Frank H. Freericks, Chairman of the A. Ph. A. Advisory Committee for Soldier and Sailor Pharmacists, Tuesday afternoon, August 26th, at 4 P.M., in Hotel Pennsylvania. Mr. Freericks explained that the Council of the American Pharmaceutical Association had voted in favor of organizing a World War Veterans Section of the A. Ph. A., provided sufficient interest was shown in the matter at the New York meeting of the A. Ph. A. and that such a Section would be able to exercise a wide influence in pharmaceutical circles and be of great assistance to the American Pharmaceutical Association in securing new members. Mr. Freericks explained that the American Pharmaceutical Association would grant membership, without the publications of the Association, to soldier and sailor pharmacists without cost for the first year.

In order to proceed with the organization of the Section, Mr. Freericks suggested that Captain W. D. Walters, of Cincinnati, be asked to act as temporary chairman and Robert P. Fischelis, of Philadelphia, as temporary secretary. These gentlemen agreed to act in the capacities named and assumed the respective temporary offices. It was moved by Mr. Fairchild and seconded by Mr. Gardier that the temporary officers named be made the permanent officers for this meeting. The motion was carried.

President Charles H. LaWall, of the American Pharmaceutical Association, was then asked to address the Section and spoke at some length upon the mutual advantages that would accrue through the formation of the Section and its affiliation with the A. Ph. A. Remarks regarding the possibilities of the Section were then made by Messrs. Fairchild, Steiger, Herron, Eddy, Chase, Shapiro, Gardier, Freericks and Fischelis. Upon motion duly seconded and carried a committee on by-laws was appointed. The Chairman named the following to serve on this committee: Clyde L. Eddy, *Chairman;* M. E. Eaton, W. M. Chase, C. S. Herron and R. P. Fischelis.

Mr. Fairchild moved that a vote of thanks be tendered Mr. F. H. Freericks for the excellent work he has carried on in behalf of soldier and sailor pharmacists and that he be invited to attend future meetings of the Section. This motion was carried.

After some remarks by the Chairman as to the purpose and possibilities of the Section, it was decided that a second meeting, to complete the organization, should be held on Wednesday evening at 7.30 P.M. in the Hotel Pennsylvania. The meeting adjourned at 6.40 P.M. The following were present:

Harry H. Johnson, 3124 Haverford Ave., Philadelphia.
Clyde L. Eddy, 100 William St., New York City.
Joseph Futterman, 4400 66th St., New York City.
Joseph Shapiro, 22nd St., 9th Ave., New York City.
Julius A. Huberman, 667 Flushing Ave., Brooklyn, N. Y.
Tappen Fairchild, 74 Laight St., New York City.
M. E. Eaton, Norwich, N. Y.
Louis A. Gardier, 318 S. Main Ave., Scranton, Pa.
Frank L. McCartney, St. Louis, Mo.
Walter M. Chase, care Bulletin of Pharmacy, Detroit, Mich.
Charles S. Herron, DuBois, Pa.
W. F. O'Daniel, U. S. N., Home—Hunniwell, Mo.; present—Caldwell, N. J.
Leonard W. Steiger, 400 Lookout Ave., Hackensack, N. J.
Robert P. Fischelis, 605 Bulletin Bldg., Philadelphia, Pa.
W. D. Walters, 161 E. McMicken Ave., Cincinnati, Ohio.

ROBERT P. FISCHELIS, *Temporary Secretary.*

SECOND SESSION.

The second session of the World War Veterans Section of the A. Ph. A. was held at the Hotel Pennsylvania, Wednesday evening, August 27th, at 7.30 P.M. Temporary Chairman W. D. Walters presided and R. P. Fischelis acted as Secretary. The minutes of the previous

meeting were read and approved. The Committee on By-Laws then submitted the following set of by-laws which were unanimously adopted:

PROPOSED BY-LAWS FOR THE WORLD WAR VETERANS SECTION.

SECTION I.

Name.

Article 1. This section shall be known as the World War Veterans Section of the American Pharmaceutical Association.

SECTION II.

Membership.

Article 1. All members of the American Pharmaceutical Association in good standing, who have served the United States during the World War, as soldiers, sailors, marines and welfare workers, who express a desire to do so, by registering their names with the Secretary of this Section, shall become members thereof.

SECTION III.

Officers.

Article 1. The officers of the Section shall be a Chairman, a First and Second Vice-Chairman, Secretary and an Advisory Board consisting of one representative from each State, Territory and District of Columbia, all to be selected from members of the Section.

SECTION IV.

Election of Officers.

Article 1. Immediately after adoption of these by-laws, the temporary Chairman shall appoint a committee of three (3), who shall report to the Section at the same or at a subsequent meeting, one name for each office other than the Advisory Board. At the last or the same session of the Section these names or other names nominated from the floor shall be balloted upon, and the one receiving a majority for that particular office shall be declared elected. These shall then be installed, shall hold office for one year or until their successors are duly elected. The first permanent Chairman shall appoint the members of the first Advisory Board for each of the respective states and territories. Thereafter annually at each annual session a Nominating Committee of one man from each State, Territory and District of Columbia, shall be named from among the members who are in attendance from said respective States, Territories and District of Columbia, and such Nominating Committee shall then report to the Section one name for each office other than members of the Advisory Board. At the last session of the Section annually these names or other names nominated from the floor shall be balloted upon, and the ones receiving a majority for that particular office shall be declared elected and shall then be installed and shall hold office for one year or until their successors are duly elected. After the second year members of the Advisory Board may be selected as shall be decided upon at the next annual session.

Article 2. Officers may be re-elected, but with the exception of the Secretary, and the Advisory Board, shall not hold the same office for more than two consecutive years.

Article 3. The Advisory Board of the Section shall fill any vacancies that may occur among the officers.

SECTION V.

Duties of Officers.

Article 1. It shall be the duty of the Chairman to represent the Section in the Council of the Association, to preside at the annual meetings of the Section, appoint all committees of the Section, and fill any vacancies when occurring in those committees. He shall present an annual address on any subject of interest to the Section that he may deem of sufficient importance. He shall otherwise act for and represent the Section as may be decided upon by the Advisory Board.

Article 2. In the absence of the Chairman the First Vice-Chairman, or in his absence, the Second Vice-Chairman, shall preside, and for the time exercise all the functions of the Chairman.

Article 3. In the absence of all three of these officers the Section shall elect a Temporary Chairman.

Secretary.

Article 4. The Secretary shall keep a record of the proceedings of the Section, shall send to the members such notices as the Section may require, shall transmit to the General Secretary the names of the officers and committees elected or appointed, and notify the General Secretary of any changes in the personnel of the officers or committees of the Section, and shall furnish the General Secretary a report of the sessions held at the annual meetings. The Secretary, at least two months in advance, shall write to each member of the Section, giving notice of the latest date upon which papers on any subject of interest to this Section can be accepted for the program.

Article 5. The Secretary shall be custodian of the records and documents of the Section, as well as of all funds specially belonging to the Section, and shall make all disbursements subject to the approval of the Chairman.

Article 6. The Secretary shall arrange the program for the annual meeting and furnish the editor of the JOURNAL of the Association the program for inclusion in the number just preceding the annual meeting.

Article 7. The Secretary shall at each annual meeting present a brief report to the Association of the conditions within the Section.

Article 8. In case the Secretary is unable to attend the annual meeting, he shall notify the Chairman to that effect and the Chairman shall then appoint a Temporary Secretary.

SECTION VI.

Meetings.

Article 1. At least two sessions of the Section shall be held at each annual meeting of the Association. Additional sessions may be held at any time during the meeting when the officers may see fit, and by consent of the Council; provided, however, that these sessions be so arranged that they conflict as little as possible with the sessions of other Sections, and that no session be held simultaneously with the final general session of the Association.

SECTION VII.

Order of Business.

Article 1. The order of business at the first session shall be as follows:

1. Chairman's Address.
2. Secretary's Report.
3. Report of Standing Committees and Committees of the Association which report to this Section.
4. Selection of Nominating Committee.
5. Nomination of Officers.
6. Miscellaneous Business.
7. Reading of papers and discussions.

Article 2. The time of the other sessions shall be taken up with the reading of papers and discussions, excepting as is provided for in Section 4 and Section 10, to hear the reports of special committees.

Article 3. The reading and discussion of papers may be interrupted at any time to consider matters referred to the Section by the Association or by the Council.

Article 4. The regular order of business may be suspended at any time during a session for that particular session by a three-fourths vote of those present.

SECTION VIII.

Article 1. The expenses of the Section shall be paid from its funds as paid to it from the Association treasury. The funds of the Section shall be ample, in order to conduct a membership campaign with a view of securing the membership of every person entitled to that privilege; the funds to be allowed for that purpose shall annually be agreed upon between the Chairman and Secretary of this Section, and the Association or the Council.

SECTION IX.

Article 1. All papers and reports presented to the Section become the property of the Association and have to be forwarded to the editor of the JOURNAL immediately following the annual meeting by the Secretary of the Section.

SECTION X.

Amendments.

Article 1. By-Laws may be amended at the final session of any annual meeting by two-thirds vote of those present, provided notice of such amendment is given with the text thereof at any previous session held at that meeting. Amendments must finally be approved by the Council and not be in conflict with the Constitution and By-Laws of the Association.

Upon motion duly seconded and carried, it was decided that the by-laws of the Section be presented by the officers to the Council for approval. The Chairman then appointed a Nominating Committee consisting of Clyde L. Eddy, C. S. Herron and L. W. Steiger. While this Committee retired to select nominees for the various offices, a set of resolutions introduced by Mr. Freericks were adopted and upon motion the officers of the Section were instructed to submit these resolutions to the Council of the Association. (See Resolutions following the Minutes.)

The Committee on Nominations reported as follows:

Chairman, Robert P. Fischelis, Philadelphia, Pa.

First Vice-Chairman, Walter M. Chase, Detroit, Mich.

Second Vice-Chairman, Tappen Fairchild, New York, N. Y.

Secretary, William D. Walters, Cincinnati, Ohio.

Upon motion duly seconded and carried, the nominations were closed and the report of the Committee was unanimously approved. The Chairman of the Nominating Committee was asked to cast a unanimous ballot for the nominees and they were then duly declared elected.

Upon motion duly seconded and carried, the Chairman was empowered to appoint a committee of three to take care of the publicity in connection with the Section. The Chairman appointed Clyde L. Eddy, New York City; Walter M. Chase, Detroit, Mich.; and C. S. Herron, DuBois, Pa.

Mr. Herron advised the members that the New York State Pharmaceutical Association had a sum of money on hand which was collected for war and Red Cross purposes during the recent conflict. Some of the members of the New York State Pharmaceutical Association, according to Mr. Herron, had expressed themselves as favoring the use of this money for purposes designed to assist pharmacists who had served in the Army and Navy and were now confronted by financial difficulties. It was also deemed possible that some of this money might be available for the work of the Section.

Temporary Chairman Walters then called the newly elected presiding officer to the chair and after some remarks by the latter regarding the need for enthusiastic coöperation of all members of the Section, the meeting adjourned at 9.30 P.M. The following attended the second meeting of the Section:

Clyde L. Eddy, 100 William St., New York City.

Leonard W. Steiger, 400 Lookout Ave., Hackensack, N. J.

Charles S. Herron, DuBois, Pa.

Louis A. Gardier, 318 S. Main Ave., Scranton, Pa.

Carl H. Thorington.

Walter M. Chase, Detroit, Mich.

Robert P. Fischelis, 605 Bulletin Bldg., Philadelphia.

William D. Walters, 161 E. McMicken Ave., Cincinnati, Ohio.

ROBERT P. FISCHELIS, *Temporary Secretary.*

RESOLUTIONS.

The resolutions introduced by Mr. Freericks, adopted by the Section and later approved by the Council, are as follows:

"Deeply appreciative of the interest shown by the American Pharmaceutical Association in the civil life re-establishment of soldiers, sailors and marines who entered the service out of

pharmacy, and of its effort to assure their continued advancement and welfare by the creation and organization of this World War Veterans Section, we pledge our loyal, constant and unselfish support to the cause of American pharmacy and the aims and ideals represented by the American Pharmaceutical Association. We call upon all men out of pharmacy who served their country during the world war to seek membership in the A. Ph. A. and through it in this Section to the end that under its guidance this may become a body of influence and power for the good of American pharmacy; to secure proper recognition for pharmacy in the Army and Navy, at the same time serving to bind them specially together with ties of fraternity, friendship and sentiment.

"Resolved, That all men out of pharmacy who are or have been in the service of the United States during the world war be requested to report to the Secretary of this Section any condition or experience met with by them while in the Service relating to or concerning pharmacy, and its practice, which, in their opinion, impairs service efficiency and denies the same degree of care, attention and skill deemed necessary for the sick in civil life, and that they be also requested to offer suggestions for improving existing conditions.

"Resolved, That the World War Veterans Section devote its immediate attention to the condition of pharmacy and the status of the pharmacist in the Army and Navy with a view to determining upon and to advocating necessary changes therein, so that correct pharmaceutical service may be provided and in order that pharmacy may secure the recognition and standing which it ought to have.

"Resolved, That a Committee of three be appointed by the chair, to compile a roster of all men out of pharmacy who served during the world war, together with data concerning them, in order that a complete record may be perpetuated.

"Resolved, That this Section solicit the advice and recommendation of the Section on Education and Legislation, and of other bodies and committees engaged in the study of pharmaceutical legislation and its necessary amendment, with a view of supporting and securing such legislative action in nation and state as the legitimate interests of pharmacy requires and the public welfare demands.

"Resolved, That as speedily as conditions will permit members of this Section be organized into respective state branches with the intent that such state branches meet at the same time and place as do respective State Pharmaceutical Associations, there to transact such business as they may deem of interest and to select a delegate to represent them at the annual meetings of this Section."

"CINCHOPHEN"—FORMERLY "ATOPHAN."

It will be remembered that the Federal Trade Commission adopted the names arsphenamin and neoarsphenamin for the drugs first introduced as "salvarsan" and "neosalvarsan," respectively; the terms barbital and barbital sodium for the substances first introduced as "veronal" and "veronal sodium," and the word procain as the name for the compound first marketed as "novocain." In issuing licenses for the use of the patents on these drugs, the commission stipulated that the drugs should be sold under the new trade designation, in which case the titles chosen by the commission should be given equal prominence. The Council on Pharmacy and Chemistry has coöperated with the Federal Trade Commission and has adopted the new names as the descriptive names which appear in New and Nonofficial Remedies. The Chemical Foundation, Inc., which has purchased some 4,500 German-owned patents, many of them for synthetic drugs, proposes to continue the wise policy of the Federal Trade Commission by requiring that those who receive licenses for the use of patents for synthetic drugs must use a common designation for each drug selected by the Foundation. "Cincophen" has been selected as the designation for the substance introduced as "atophan" (also described in the U. S. Pharmacopoeia under "phenylcinchoninic acid"). In consideration of this action on the part of the Chemical Foundation, and also because physicians found it difficult to use the pharmacopoeial name "phenylcinchoninic acid," the Council on Pharmacy and Chemistry has recognized the contracted term "cinchophen" as a name for the drug introduced as "atophan." It is hoped that physicians will support this simplified and nonproprietary nomenclature in the same spirit with which they adopted the terms "arsphenamin," "barbital" and "procain."—*Journal A. M. A.*, August 9, 1919, p. 427.

EDITORIAL NOTES

Editor: E. G. EBERLE, Bourse Building, Philadelphia, Pa.

Committee on Publication: J. W. ENGLAND, *Chairman;* G. M. BERINGER, CASWELL A. MAYO, H. B. MASON, E. L. NEWCOMB, and the Editor-in-Chief of the JOURNAL, General Secretary, Treasurer and Reporter on the Progress of Pharmacy, *ex-officio.*

TWENTY MILLION DOLLARS FOR MEDICAL EDUCATION.

The value of the announced gift of $20,000,000 to American medicine by the General Education Board (Rockefeller Foundation) does not lie wholly in the munificence of the gift nor in the relief it may bring to the medical institutions that come within the sphere of its beneficence, but in the example it should set to other givers.

The gifts of the Rockefeller Foundation are in most cases conditioned on changes in teaching methods and curricula. Local men should place medical schools on a financial basis that will enable them to comply with the provisions of the General Education Board.

Naturally, we are interested in medical promotions but more so in pharmacy schools. Many men of means must ascribe their success in pharmaceutical and chemical manufacturing to pharmacists. There are comparatively few pharmacists who have made fortunes in pharmacy. The two interests owe much to pharmacy schools, but only a few endowments have been provided for the latter. This is repetition of a very important matter. There is opportunity to endow schools according to the views of those who desire to perfect teaching along commercial lines and those who would encourage pharmaceutical research. While it is well enough to make such provisions in a will, to provide an endowment during the lifetime of the donor gives him the opportunity to witness the results of his investment. Both the spirit and attitude are important for they mould public opinion relative to pharmacy and the drug business.

DEATH OF SIR PETER WYATT SQUIRE.

News has come of the demise of Sir Peter Wyatt Squire on September 17, aged seventy-two years. A brief sketch appeared in the JOURNAL for July, 1918.

The deceased was a son of the late Peter Squire, head of the historic pharmacy in Oxford Street, London, and had been on the medical staff of the English Royalty from the time of Queen Victoria's accession. The former had the honor of receiving the Jubilee Medal in 1887, with bar in 1897, the Coronation Medals of King Edward and King George, and was knighted in June, 1918.

Sir Peter Wyatt Squire was a student and prize winner of the British Pharmaceutical Society School, under Bentley and Redwood. He served as member of the Council from 1879–1885. He revised "Squire's Companion to the British Pharmacopoeia," was the author of "Methods and Formulae Used in Preparing Tissues for Microscopic Work," "Pharmacopoeias of the London Hospitals," "Companion to the Medicine Chest," and a frequent contributor to pharmaceutical and other scientific and technical publications.

Dr. Albert Schneider has resigned from the California College of Pharmacy to accept a call to the University of Nebraska. We understand that he is to occupy the Chair of Pharmacognosy in the Department of Pharmacy and will devote time to research.

Major General Merritte W. Ireland, surgeon general of the United States army, has been given an honorary fellowship by the Royal College of Surgeons, of Edinburgh, Scotland.

Frank G. Ebner, for some time assistant editor of the *Bulletin of Pharmacy,* has accepted a place in the advertising department of Parke, Davis & Co. **Walter M. Chase** has been elected assistant editor of the *Bulletin.*

Horace Greely Pierson, the elder brother of Romaine Pierson, publisher of the *Practical Druggist,* died August 9. The deceased was a druggist of Hornell, N. Y.

The New York drug and pharmaceutical publications gave much space to American Pharmaceutical Association matters. Each one of them rendered excellent service, worthy of more than this passing notice. The reports were up to their high standard and their special features interesting. These efforts are appreciated by the Association, and supplied their many readers with early reports of its transactions.

The male employees of Jno. T. Milliken & Company, pharmaceutical manufacturers, of

St. Louis, Mo., have organized an association to be known as the Milliken Expediters' Club, the purpose of which is to promote good fellowship among the employees and to bring them into closer relationship with the heads of the various departments.

Kenneth N. Gilpin, son of H. B. Gilpin, member of the American Pharmaceutical Association, will in all probability be elected Speaker of the Virginia House of Representatives, of which he is a member. He served in the Aviation Corps during the war.

Richard M. Colgate, deceased, of Colgate & Co., bequeathed $100,000 each to Yale and Colgate Universities.

CURES FOR UNREST.

The conferences to be held in Washington this month should have the interest of all citizens. The purpose of the International Labor Congress is not to formulate a series of rules and restrictions, nor concerned with scales and schedules of wages. It will be the aim of labor men, economists, capitalists and politicians to suggest or devise a code under which the worth of men to industry, to the community and to civilization can be established. This is a move in the right direction, for most of the unrest is due to misunderstanding and loose thinking. These conferences are to be international in character, but applying the thought to our interests, we may compete with foreign countries because of our great resources and our machinery, but it will not be with idle factories and shiftless workers. Let us think constructively.

ILEX VOMITORIA AS A NATIVE SOURCE OF CAFFEINE.

Frederick B. Power and Victor K. Chestnut, in *J. Amer. Chem. Soc.*, 41, 1307–12, August, 1919, report that search for a native source of caffeine has demonstrated that an abundant supply may be obtained from a native plant, *Ilex vomitoria*, Aiton. Assays by a method developed by the authors, published in the same issue and printed in abstract hereafter, showed the presence, in most cases, of about 1.0 to 1.5 percent of caffeine in dried leaves. Although considerable differences in the caffeine content of the leaves of the plant have been found to exist, these are doubtless attributable to varying conditions of soil and climate. It would, therefore, appear that by the cultivation of the shrub under the most favorable conditions the supply of material for the production of caffeine could be increased to any desired extent.

So far as has at present been ascertained no other North American species of *Ilex* than that above mentioned contains caffeine, and this substance is not contained in the leaves of the European holly, *Ilex aquifolium*, Linné.

The assay method is recommended as the result of a large number of experiments with different material. The procedure has been abstracted by the PHARMACEUTICAL JOURNAL as follows:

Ten grammes of the finely ground material, previously moistened with a little alcohol, 95 percent, is extracted for about eight hours, in a Soxhlet, with alcohol. The alcoholic extract is then added to a suspension of 10 grammes of heavy magnesium oxide in 100 mils of water, contained in a porcelain dish, the extraction flask being rinsed with a little hot water. The mixture is evaporated on a water-bath until a nearly dry, powdery residue remains. This is mixed with sufficient hot water to enable it to be transferred to a filter, the dish being thoroughly cleaned with a little hot water by means of a glass rod with a rubber tip. The residue on the filter is then thoroughly washed with successive portions of hot water until about 250 mils of filtrate is obtained. This is transferred to a litre flask and treated with 10 mils of 10 percent solution of sulphuric acid. In some cases, as with tea and guarana, 20 mils of this acid is necessary, to prevent the formation of an emulsion in the subsequent shaking-out extraction. The acid mixture is first gently heated until frothing ceases, and then boiled, under an inverted funnel condenser, for thirty minutes. After cooling, the liquid is filtered into a separator, the flask being washed with a little 1:200 sulphuric acid. The clear acid filtrate is then shaken out with six successive 25 mils of chloroform. The chloroform extracts are bulked in another separator and shaken out with 5 mils of 1:100 solution of caustic potash, to remove coloring matter. After separation the clear chloroform is filtered into an Erlenmeyer flask, the remaining alkaline liquid being subsequently shaken out with two successive 10 mils of chloroform. This is filtered into the first chloroform solution, and the filter washed with a little of the same solvent. The chloroform is then distilled off, the residual caffeine being transferred to a tared beaker by means of a little of the solvent. After allowing the chloroform to evaporate spon-

taneously, the caffeine is dried for thirty minutes in the water-oven and weighed. It is then again heated for another thirty minutes, when a further slight decrease in weight is usually noted. This second weight is taken as caffeine. The final product is practically pure caffeine.

SUBSTITUTE FOR SENNA LEAVES.

Since the beginning of 1917 large quantities of so-called Palthé senna leaves have been imported into Germany from Switzerland. They have been identified as the leaves of *Cassia auriculata*, L., and are readily distinguished from senna leaves by the rounded and not tapering apex. It is remarkable that they contain no oxymethylanthraquinones and are free from laxative action. With Bornträger's reaction (shaking an infusion with petroleum benzine, separating, and shaking the benzine with ammonia) a yellow coloration of the ammonia is produced, whereas with genuine senna leaves a rose color is obtained.—*Pharm. Ztg.*, 64, 242, through *Pharm. Journal*.

CAPSELLA BURSA PASTORIS.

Ergot and hydrastis being no longer obtainable in German commerce, Grimme recommends a liquid extract of this herb as a substitute. Its haemostyptic properties have long been known, and it is said to equal those of ergot and of hydrastis. The active constituent is supposed to be an organic acid, bursic acid. A liquid extract (1 in 1), made by exhausting the drug with boiling water, had a specific gravity varying from 1.042 to 1.064, and contained 9.06 to 14.61 percent of extract.—C. Grimme, *Pharm. Ztg.*, 64, 388, through *Pharm. Journal*.

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PURCELL, R., New York City.

Q.

QUACKINBUSH, B. F., New York City.

R.

Ralston, R. W. W., Richmond, Va.
Raubenheimer, Mrs. Otto, Brooklyn, N. Y.
Raubenheimer, Otto, Brooklyn, N. Y.
Raubenheimer, Mrs. Carl, Newark, N. J.
Raubenheimer, Carl, Newark, N. J.
Raubenheimer, Herbert C., Brooklyn, N. Y.
Raubenheimer, Hilda, Brooklyn, N. Y.
Rauch, Geo., Mt. Vernon, N. Y.
Reaske, Herman, New York City.
Rehfuss, J. H., Brooklyn, N. Y.
Reither, Miss Helen, Lynbrook, L. I.
Reither, Winslow T., Lynbrook, L. I.
Rhodes, Chas. R., Hyndman, Pa.
Richtman, W. D., Madison, Wis.
Riley, M., New York City.
Riley, D. T., Florence, S. C.
Ritchie, Mrs. J. B., Newark, N. J.
Ritchie, Miss Margaret, Newark, N. J.
Roehrig, A. M., Savannah, Ga.
Roehrig, Mrs. A. M., Savannah, Ga.
Roon, Leo, Elmhurst, L. I.
Roon, Mrs. L., Elmhurst, L. I.
Rosin, Joseph, Philadelphia, Pa.
Rosenzweig, E., Hoboken, N. J.
Rowe, Mrs. L. W., Detroit, Mich.
Rowe, L. W., Detroit, Mich.
Rowe, Edward, New York City.
Rowe, A. H., Brooklyn, N. Y.
Rudd, Wortley F., Richmond, Va.
Ruddiman, E. A., Nashville, Tenn.
Ruediger, Mrs. W., Brooklyn, N. Y.
Rusby, H. H., Newark, N. J.
Russell, G. A., Washington, D. C.
Russin, Wm., New York City.

S.

Sayre, L. E., Lawrence, Kans.
Sayre, Edward A., Orange, N. J.
Sayre, Mrs. E. A., Orange, N. J.
Schachleiter, Frank, Little Rock, Ark.
Schaefer, Hugo H., New York City.
Schaefer, Chas., Brooklyn, N. Y.
Schaefer, Miss Elsa, Brooklyn, N. Y.
Schaefer, Frederick, Brooklyn, N. Y.
Schaefer, Mrs. Tillie, Brooklyn, N. Y.
Schaffer, Chas., Brooklyn, N. Y.
Scherling, Miss Gertrude, Sioux City, Ia.
Scherling, G., Sioux City, Ia.
Scherling, Mrs. G., Sioux City, Ia.
Schmidt, Adolph, Hoboken, N. J.
Schmidt, Chas. H., Hoboken, N. J.
Schulsinger, Samuel, New York City.
Schwarz, L. J., New York City.
Schweinfurth, Geo. E., New York City.
Scoville, W. L., Detroit, Mich.
Seagle, D. E., Pulaski, Va.
Seeley, Marshall E., Hartford, S. D.
Sellman, J. K., Fordham, N. Y.
Sencindiver, J. H., New York City.
Sheel, E. V., Memphis, Tenn.
Sheel, Mrs. E. V., Memphis, Tenn.
Sherman, B. W., New York City.
Silva, Miss Marion, New London, Conn.
Skinner, Chas. H., Windsor, Vt.
Sneider, C. C., Mt. Vernon, N. Y.
Snow, Clyde, M., Chicago, Ill.
Snyder, Geo. F., Detroit, Mich.
Snyder, J. P., Norwich, N. Y.
Sohl, Wm., New York City.
Sparks, Edgar R., Burlington, N. J.
Spease, Edward, Cleveland, O.
Spease, Mrs. Edward, Cleveland, O.
Spira, Michael, Utica, N. Y.
Stabler, Mrs. L. J., Los Angeles, Cal.
Stabler, L. J., Los Angeles, Cal.
Starr, Miss Mabel C., Buffalo, N. Y.
Stewart, F. E., Philadelphia, Pa.
Stewart, Mrs. F. E., Philadelphia, Pa.
Stocking, Prescott, New York City.
Stocking, C. H., Jr., New York City.
Stocking, Mrs. C. H., New York City.
Stocking, C. H., New York City.
Stofer, R. C., Norwich, N. Y.
Stroup, Freeman P., Philadelphia, Pa.
Sturmer, J. W., Philadelphia, Pa.
Sultan, Fred W., St. Louis, Mo.
Sundock, Philip, New York City.
Sundock, Mrs. P., New York City.
Sweeney, Wm. A., New York City.
Swiezback, Lieut., Brooklyn, N. Y.

T.

Tebault, H. H., New York City.
Teetlebaum, I., Fordham, N. Y.
Teeters, Wilber J., Iowa City, Ia.
Terry, Robert W., Columbus, O.
Thompson, E. A., Chatham, Va.
Tilford, J. F., Wichita, Kans.
Tongue, W. B., Poughkeepsie, N. Y.
Turner, Jos. L., Brooklyn, N. Y.
Tyler, Earl A., Elizabeth, N. J.

U.

Utech, P. Henry, Meadville, Pa.
Utech, Mrs. P. H., Meadville, Pa.

V.

Van Aller, Thos. S., Mobile, Ala.
Van Buren, C. H., New York City.
Vanderkleed, Chas. E., Collingswood, N. J.
Villamena, Diodata, New York City.
Vilas, Fred L., Pierre, S. D.

W.

Walker, Chas. F., Richmond, Va.
Walsted, P., New York City.
Walton, L., Williamsport, Pa.
Watson, Herbert K., Wilmington, Del.
Watson, Miss Alice D., Wilmington, Del.
Webber, Henry S., New York City.
Weil, Jacob H., New York City.
Weintraub, Miss Estelle M., New York City.
Wheeler, Carlton B., Hudson, Mass.
Whelpley, H. M., St. Louis, Mo.
Whelpley, Mrs. H. M., St. Louis, Mo.
White, J. S., Jr., New York City.
White, Leydan J., New York City.
White, Mrs. S. J., New York City.
White, Robert C., Philadelphia, Pa.
White, Wm. R., Nashville, Tenn.
Whitehouse, Harry, Johnson City, Tenn.
Whitehouse, Mrs. H., Johnson City, Tenn.
Whittle, Wm., Baltimore, Md.
Wickham, Edward A., East Orange, N. J.
Williams, John M., New York City.
Wimmer, Curt P., New York City.
Wimmer, Mrs. C. P., New York City.
Winne, A. L. I., Richmond, Va.
Wirth, Rudolph, New York City.
Wirthman, J. Geo., Kansas City, Mo.
Wirthman, Mrs. J. Geo., Kansas City, Mo.
Wirthman, Miss Marie, Kansas City, Mo.
Wisner, E. H., Valparaiso, Ind.
Wood, Mrs. Lewis F., Cleveland, O.
Wyszynski, W. H., Chicago, Ill.

Y.

Youngken, H. W., Philadelphia, Pa.

Z.

Zagat, Arthur L., New York City.
Zagat, Mendel, New York City.
Zehner, G. O., Brooklyn, N. Y.
Zeigler, W. H., Charleston, S. C.
Zeigler, Mrs. W. H., Charleston, S. C.
Zink, Edward, New York City.
Zink, Mrs. Edw., New York City.
Zoeller, E. V., Tarboro, N. C.

THE AMERICAN CONFERENCE OF PHARMACEUTICAL FACULTIES.

BY THEODORE J. BRADLEY, SECRETARY.

The Twentieth Annual Meeting of the American Conference of Pharmaceutical Faculties was held at the Hotel Pennsylvania, New York City, on August 25–26, 1919. Delegates were in attendance from about thirty colleges located in twenty-four States. The President, Dean Charles B. Jordan of Purdue University School of Pharmacy, Lafayette, Indiana, presided at all sessions and his presi-

dential address was one of the features of the meeting. Of the constructive recommendations made by the President, the following were adopted after consideration and report by a special committee on the address:

1. That the dues be increased from ten dollars to twenty-five dollars per year for each member college, and that the entrance fee shall be twenty-five dollars hereafter.

2. That the Executive Committee prepare a budget showing the amounts that can properly be expended by the standing and other committees of the Conference, for expense.

3. That the Executive committee take steps to have the Conference coöperate with other organizations to suitably memorialize the service rendered by pharmacists in the great war.

4. That the Conference approve the exchange of lectures between members of the faculties of member colleges.

5. That a special committee be appointed to prepare a memorial to the Carnegie Foundation, requesting that an investigation be made of pharmaceutical education in the United States, similar to the investigation already made of medical education, dental education, etc.

6. That the Conference appoint a special committee to collect and distribute information on pre-requisite legislation to aid in the securing of such legislation in States not yet having a pre-requisite in pharmacy, this committee of the American Conference of Pharmaceutical Faculties to act jointly with a similar committee of the National Association of Boards of Pharmacy.

7. That the Conference reaffirm its adoption of high school graduation as a requirement for entrance to all member colleges after July 1, 1923, and to recommend that this entrance requirement be made effective at an earlier date when possible.

The Secretary-Treasurer, Theodore J. Bradley of Massachusetts, presented his report, in which the President's recommendation that the dues in the Conference be increased was endorsed. The total receipts of the Conference for the past year amounted to $492.66, while the expenditures were $863.72, the deficit being made up from the accumulated balance in the treasury. The balance on hand July 31, 1919, was $686.27, of which $600 is invested in Liberty Bonds.

Reports of the various standing and special committees were received as follows:

Executive Committee.—J. A. Koch of Pennsylvania, Chairman.

National Syllabus Committee.—T. J. Bradley of Massachusetts, Chairman.

Committee on Higher Educational Standards.—W. J. Teeters of Iowa, Chairman.

Committee on Faculties.—Zada M. Cooper of Iowa, Chairman.

Committee on Curricula and Teaching Methods.—J. W. Sturmer of Pennsylvania, Chairman.

Committee on Activities of Students and Alumni.—R. A. Lyman of Nebraska, Chairman.

Committee on Relations of Pharmacy Schools and other Professional Schools.—W. F. Rudd of Virginia, Chairman.

Committee on Research.—Henry Kraemer of Michigan, Chairman.

Committee to Consider and Report on the Question of the Establishment of Two Classes of Pharmacists and Corresponding Courses in Colleges of Pharmacy.—Jacob Diner of New York, Chairman.

Committee to Work Out Methods of Presenting the Advantages of Pharmacy as a Calling to High School Students.—W. B. Day of Illinois, Chairman.

Joint Committee on Examination Questions.—E. A. Ruddiman of Tennessee, Chairman.

Committee on Relations of the Colleges with the Boards.—Charles E. Caspari of Missouri, Chairman.

All of these committee reports will be published in the proceedings of the Conference and several of them will appear in other publications.

H. H. Rusby, of New York, read a paper on the Betterment of Salary Conditions in our Schools of Pharmacy, and, after discussion, it was voted that the Executive Committee send copies of this paper to the administrative heads of all colleges of pharmacy with the request that steps be taken to secure additional funds so that the salaries paid to teachers in the pharmacy school can be materially increased.

W. H. Ziegler, of South Carolina, presented a paper on the teaching of pharmacodynamics and related subjects in pharmacy schools, which was thoroughly discussed by many of the delegates present.

It was voted to appoint a representative for the Conference on the newly organized pharmaceutical publicity committee, representing all the interests allied with pharmacy

and to pay its share of the expenses of this committee.

It was voted to accept the invitation for the Conference to be represented in the National Drug Trade Conference.

The following officers were elected for the ensuing year:

President, Wortley F. Rudd of Richmond, Va.

Vice-President, Julius A. Koch of Pittsburg, Pa.

Secretary-Treasurer, Theodore J. Bradley of Boston, Mass.

Chairman of the Executive Committee, Henry Kraemer of Ann Arbor, Mich.

Members of the Executive Committee.—Charles B. Jordan of Lafayette, Ind.; Julius W. Sturmer of Philadelphia, Pa.; Rufus A. Lyman of Lincoln, Neb.

Member of the Pharmaceutical Syllabus Committee.—E. Fullerton Cook of Philadelphia, Pa.

THE NATIONAL ASSOCIATION OF BOARDS OF PHARMACY.

BY H. C. CHRISTENSEN, SECRETARY.

The first session of the Sixteenth Annual Convention of the National Association of Boards of Pharmacy was called to order by President John Culley of Utah, at 10 o'clock Monday morning, August 25, 1919, in Parlor C of the Pennsylvania Hotel, New York City.

The meeting proceeded at once with the order of business. Secretary Christensen called the roll of States and announced that 31 State Boards of Pharmacy were represented, the total of delegates being 62. The 31 States represented at the meeting including the District of Columbia, were the following: Alabama, Arkansas, Colorado, Connecticut, District of Columbia, Florida, Georgia, Illinois, Iowa, Kansas, Kentucky, Louisiana, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Nevada, New Hampshire, New Jersey, New York, North Carolina, Ohio, Oklahoma, Pennsylvania, South Dakota, Tennessee, Utah, Vermont, Virginia, West Virginia. At this time the *Active* Member list of the N. A. B. P. includes 43 States and the District of Columbia, making a total 44 between which reciprocity is in force. The State of New York is an "Associate" member State. There is at present no reciprocity between the State and Active Member States of the Association, although it is expected that conditions will permit of this important step in the very near future.

Probably the one most important accomplishment of the meeting was the adoption of a reorganization plan proposed by President Culley. In bringing the matter of reorganization to the attention of the Association the President stated in part, as follows: "The Association was organized sixteen years ago expressly to provide for interstate reciprocity in pharmaceutic licensure based upon a uniform pharmaceutic education and uniform legislation as stated in the Association's Constitution." He then explained that not only had this object practically been accomplished, but that it had been necessary to enter into so many other pharmaceutical, legislative and educational activities that he believed the organization as constituted not equal to the added burden imposed upon it. He emphasized the necessity for reorganization and explained that it was not a question of what had or had not been accomplished, "but a question of what we must do, and that our work is cut out for us." The plan of reorganization as adopted divides the United States into eight geographical districts or sections, with a Vice-President to be elected for each district, to have full power of supervision as a representative of the Association's work. The Vice-President in each of the eight districts is also to act as a member of the Advisory Committee for his district, and is to make personal visits to the boards included in his section. The Secretary of the Association is to remain the Chairman of the Advisory Examination Committee and is to attend meetings of boards of pharmacy in the different districts.

Probably the strongest feature of the reorganization plan is the one which provides that the President be elected from the membership of the eight Vice-Presidents, and that of the Executive Committee three members be elected from ex-Presidents. This arrangement will give a thoroughly systematic and well balanced working force and will, it is believed, bring correspondingly better results.

The Association again went on record as favoring higher requirements,—both preliminary and professional, and instructed the Secretary to take up with the individual State boards of pharmacy the matter of urging the adoption of four years of High School work and graduation in pharmacy as a pre-requisite for entrance to examination for registered pharmacist; these requirements to become effective not later than October 1, 1923.

The recommendation of the President with reference to the Fairchild Scholarship was unanimously adopted. The recommendation is as follows: That the Scholarship be a second year term in a Conference School or College of Pharmacy and be awarded on the basis of a competitive examination to candidates who are High School graduates and who have finished their first year work in a school or college of pharmacy, and that each school should be allowed or limited to two, or at the most three, candidates.

A recommendation was also passed that State boards, insofar as it is possible in accordance with laws governing registration of pharmacists in various States, require that candidates for examination must be citizens of the United States.

The Association also went on record as being adverse to the handling of narcotic prescriptions written by physicians for addicts, and recommended that the Government and the States provide institutions where these unfortunates would be under the personal care of nurses and physicians in the administration of curative dosages.

A motion was made and unanimously carried, that the boards obtain power wherever possible to revoke State licenses on "wilful" violation of narcotic laws.

On presentation by Professor Army of the proposition to organize a National Committee on Pharmaceutical Publicity this plan received the unanimous endorsement of the Association, which carried with it the recommendation that the N. A. B. P. hold membership in such an organization.

Officers for the ensuing year were elected, as follows:

President, W. R. Jarrett of Oklahoma City, Okla.

Vice-Presidents: L. L. Walton, Pennsylvania; Joseph Piercy, Nevada; Joseph L. Dow, New Hampshire.

Executive Committee: Charles Gietner, Chairman, Missouri. Members: John Culley, Utah; Lawrence C. Lewis, Alabama. Treasurer, Charles H. Skinner, Vermont; Secretary, H. C. Christensen, Illinois.

PHARMACY IN THE ARMY AND NAVY.

A meeting of the National Pharmaceutical Service Association was held on the evening of August 28th at the Hotel Pennsylvania during the Convention of the American Pharmaceutical Association and everyone was cordially invited to be present.

The President, Dr. Frank Cain of Cincinnati, presided, and read an address urging the joint effort of pharmaceutical organizations working in harmony with physicians toward the proper recognition of pharmacy in the Army and Navy. He also presented the following letter from the Surgeon-General, which was received with applause and recognized as the beginning of the cordial relationship which will undoubtedly result in the adequate recognition of pharmacy:

"WAR DEPARTMENT,
OFFICE OF THE SURGEON-GENERAL,
WASHINGTON.

August 14, 1919.

"PROFESSOR E. FULLERTON COOK,
145 North Tenth Street,
Philadelphia, Pa.

"MY DEAR DR. COOK:

"I now desire to give you in writing the substance of the conversation we had on August 11th, in regard to commissions for pharmacists in the medical department of the Army. I think it is most important for the future welfare of the medical department to have a service corps for commissioned officers. To become an officer in this corps, it will be necessary for an applicant to enlist in the medical department and serve for a period of about five years. During this time he will be given an opportunity to perfect himself in hospital administration, quartermaster's duties, motor transport service, mess management, registrar's duties, pharmaceutical work, and the general duties of the hospital corps. It will be one of the requirements that an applicant for a commission in the service shall be a non-commissioned officer for 3 years of his 5-year enlistment. The duties of the officers of the service corps will be to act as adjutants of our large hospitals, property officers, mess officers, transport officers for the ambulance companies, and various other duties of non-professional character, connected with the medical department, for which we now have to use a highly trained medical officer.

"I have recommended to the General Staff that a service corps for the medical department be incorporated in the army reorganization bill now before Congress, and I sincerely trust this corps will be authorized.

"I am perfectly willing that a limited num-

ber of vacancies in the service corps shall be set aside for men who specially qualify themselves as pharmacists, and in the course of instruction candidates for the service corps will have to take, suitable provision will be made for advanced instruction in pharmaceutical work.

"After our very frank discussion of the needs of the medical department for pharmacists, I think we both agree that this will solve the question in a most satisfactory manner.

"With cordial regards, believe me,

"Very sincerely yours,

(*Signed*) M. W. IRELAND,
Surgeon-General, U. S. Army."

The President believed that the proposal of the Surgeon-General should be carefully considered and that a conference should be held with the Surgeon-General by a committee representing the several pharmaceutical organizations, and by this means to arrive at a plan whereby the associations can assist the Surgeon-General in his effort to establish a "service corps" and also provide a better status for pharmacists in the corps.

It was believed that the five-year non-commissioned service as a pre-requisite to commissions should be modified for those men who have adequate scientific training, although the Surgeon-General's desire that the candidate for commission should have thorough military training was recognized as essential.

The Secretary presented a statement of the general situation in both the army and navy, calling attention to the fact that the Hospital Corps Bill, known as H. R. 4760, had been combined in what was known as the Personnel Bill, and hearings will be granted some time this fall. The importance of securing the approval of the Secretary of the Navy was emphasized, and since then it has been learned that this will be of vital importance in obtaining the favorable consideration of the Naval Affairs Committee. Every effort should be made to enlist the interest and secure the approval of Secretary Daniels.

Colonel Frederick M. Hartsock, of the Surgeon-General's office, was present and spoke of the excellent work done by pharmacists in the Army, which was recognized as indispensable. He said the general staff had not worked out the details of the reorganized army, but that pharmacy should, in his opinion, be given adequate recognition. He recommended that proper presentation be made by pharmacists of their cause and that a definite plan be worked out and presented to the Surgeon-General. A vote of thanks was extended to Colonel Hartsock for his frank statement and evident interest in pharmacists in the Service.

Mr. Beringer, in expressing appreciation for the statement made by Colonel Hartsock, expressed the hope that Colonel Hartsock would 'take back to the Surgeon-General's office the sense of this meeting and of this Association, which had always stood for co-operation with the Surgeon-General and desire to give the Army and Navy the most efficient aid and trained service which pharmacy could offer, and only asked for an opportunity on a basis which would permit the best service.

Lieutenant W. T. Minnick, of the Hospital Corps of the Navy, then spoke of the work of the pharmacist in the Navy. He stated that a Surgeon-General is compelled to take the view of the best interests of the entire service in recommending a preliminary military training before receiving commissions. He explained the many activities of the pharmacist in the Navy and the need for thorough training. The Association voted a motion of thanks to Lieutenant Minnick for his clear exposition of the situation in the Navy.

Mr. Charles F. Harding, President of the National Association of Retail Druggists, was present and promised the coöperation of the N. A. R. D. in every proper effort which would be started to insure proper recognition of pharmacy in the Army and Navy, and he suggested that all interests get together in a conference and devise a plan upon which all could unite. In the limited time available, the general subject was discussed by Professor Spease of Cleveland, Mr. Mayo of Cincinnati, Major F. L. McCartney, a pharmacist who served in the department of supplies in the Surgeon-General's office throughout the war, and by others.

Mr. Beringer moved that a committee be appointed by the President to endeavor to secure an early conference with the Surgeon-General of the Army, if possible in coöperation with similar committees from other national pharmaceutical associations, presenting the views of American pharmacy concerning the Surgeon-General's suggestion for the organization of a "service corps," and the recognition of pharmacy as set forth in his letter of August 14th, endeavoring to arrive at a mutually satisfactory plan for the establishment of pharmacy in the Army. This motion

was seconded and unanimously approved. Dr. Cain, the President, appointed on this committee for the conference with the Surgeon-General of the Army, Mr. George M. Beringer, Chairman, and Mr. Caswell A. Mayo and E. Fullerton Cook as the other members.

E. FULLERTON COOK,
Secretary, N. P. S. A.

THE AMERICAN CHEMICAL SOCIETY.

Probably the largest meeting in the history of the American Chemical Society was held in Philadelphia during the week of September 3. A feature of the Convention was the *Daily Catalyst*, the official bulletin of the Philadelphia and Delaware Sections of the A. C. S., Robert P. Fischelis being one of the editors. Secretary of War Baker addressed the convention.

The Society indorsed the establishment of a separate Federal patent and trade-mark office; attacked the policy of the Army with respect to the abolition of the Chemical Warfare Service; defended the quality of American dyes now attacked by German propaganda, and urged a request to President Wilson to take operative control of German dye plants in occupied territory.

The Council accepted the invitation of St. Louis for the spring meeting of 1920 and the autumn meeting will be held in Chicago.

Dr. Charles Herty was again elected editor of the *Journal of Industrial and Engineering Chemistry*. Major A. B. Lamb was reëlected editor of the *Journal of the American Chemical Society*, and E. J. Crane the editor of *Chemical Abstracts*. Dr. Charles L. Parsons was chosen secretary, and Dr. B. C. Hesse a member of the Committee on National Policy.

A number of prominent pharmaceutical chemists attending the Convention of the American Chemical Society at Philadelphia were entertained at luncheon at the City Club by the Philadelphia Branch of the American Pharmaceutical Association on Thursday, September 4, 1919.

Those present were Dr. Frank O. Taylor, Dr. George D. Beal, Dr. E. L. Murray, Prof. H. V. Arny, Dr. Edward Kremers, Dr. J. H. Beal, Prof. L. E. Sayre, Dr. Reid Hunt, Dr. L. F. Kebler, Dr. A. P. Sy, Dr. H. C. Hamilton, Dr. I. K. Phelps, Prof. W. F. Rudd, Dr. H. T. Graber, Prof. Jeannot Hostmann, Dr. T. S. Githens, Dr. Arthur Hirschfelder, Dr. Frank R. Eldred, H. K. Mulford, Dr. C. E. Vanderkleed, C. H. Kimberly, Dr. P. S. Pittenger, Dr. W. A. Pearson, Dr. F. E. Stewart, Prof. E. F. Cook, Prof. J. W. Sturmer, Dr. R. P. Fischelis, R. H. Lackey, Prof. Charles H. LaWall, Jos. W. England, Ambrose Hunsberger, E. G. Eberle and Elmer H. Hessler.

NATIONAL ASSOCIATION OF RETAIL DRUGGISTS.

Theodore F. Hagenow, of St. Louis, was elected president of the National Association of Retail Druggists at the twenty-first annual meeting of that organization held at Rochester. Mr. Hagenow has long been identified with the Association, having been an ardent worker in its ranks, and a member of its executive committee.

Vice-President W. A. Oren, of Indianapolis, was reëlected and also Secretary Samuel C. Henry. The other elected officers are: Second Vice-President, Elmer E. Chilson of Rochester, N. Y.; Third Vice-President, Chas. J. Clayton of Denver, Colo.; Treasurer, John J. Possehl of Milwaukee, Wis.; Members of Executive Committee for three years, Julius H. Riemenschneider of Chicago, Ill., and Charles F. Harding of Cincinnati, Ohio.

The attendance was satisfactory and the interest gratifying. The drug exhibition proved an attractive feature.

Resolutions adopted favored the refusal of druggists to sell alcoholic liquors, even on prescription. Other resolutions contained an appeal for legislation to protect the chemical and dye industries of the country, favored an early repeal of the tax on proprietary goods, supported the Stephens bill, urged manufacturers to adopt the Colgate price-protection plan, recommended that druggists advertise none but price-protected goods, opposed the sale of drugs and medicines except by druggists, and inveighed against manufacturers' advertising derogatory to retailers.

According to official reports, during the year just brought to a close the association enjoyed the largest membership in its history.

AMERICAN DRUG MANUFACTURERS' ASSOCIATION.

On August 28, the Scientific Section of the American Drug Manufacturers' Association held a meeting at the Waldorf-Astoria, New York City, at which President Sayre of the A. Ph. A. was a notable guest.

One of the actions of greatest moment took

the form of a recommendation that Extracts of Aconite Leaves be deleted from manufacturers' price-lists on the ground that there is practically no demand for these troublesome preparations. In connection with the subject of Aconite it was also decided to recommend the recognition of Japanese Aconite in the U. S. P., but as a separate drug, since its constituents are somewhat different. It is thought that its admission would relieve the shortage of aconitine, of which there is none available in this country at this time.

Attention was also given to the fact that some of the menstrua of the U. S. P. are not entirely satisfactory and that, as a result, manufacturers are in many instances obliged to list a formula providing a special menstruum of their own in addition to the formula of the U. S. P., thus multiplying to a degree that is vexatious to both manufacturer and dealer the number of preparations to be carried in stock. With a view to simplification, a sub-committee was appointed to collect the experience of manufacturers on unsatisfactory menstrua and to endeavor to compile a simpler list of menstrua that they will be able to recommend to the Committee of Revision as meeting the approval of all manufacturers.

F. R. Eldred proposed that the Association retain the services from time to time of eminent research workers to conduct exhaustive researches on certain drugs of which comparatively little is known and to publish the results of their work for the benefit of all. It was thought that a place might be found for the work in the Mellon Institute and it was remarked that an investigator would progress at an immeasurably faster rate than if working alone, since he would have the benefit of the facilities and experience of the laboratories of almost all the pharmaceutical manufacturers of the country. The "Constituents of Digitalis" was suggested as the subject of the first of these treatises for, while the literature of Digitalis is voluminous, the subject is left in a most unsatisfactory condition. The Section recommended careful consideration of Dr. Eldred's proposal by the Association's Executive Committee.

DAIRY, FOOD AND DRUG OFFICIALS.

The twenty-third annual Convention of the Association of Dairy, Food and Drug Officials was held in New York City during the week of September 8. More than 300 delegates were present. Dr. L. P. Brown spoke on "Food Sanitation in Army Camps," Dr. Carl S. Alsberg on "Food Containers and Utensils."

Dr. R. E. Rose, State chemist of Florida, who spoke on "State Drug Control, Present and Future," advocated an amendment of the national food and drug law by striking out of the provision allowing sub-standards of pharmaceuticals.

The following resolution was adopted:

WHEREAS, The U. S. Pharmacopoeia is the legally constituted standard for drugs under the drug laws of the several States and of the United States, and

WHEREAS, The U. S. Pharmacopeia is revised at fixed intervals by a revision committee; therefore, be it

Resolved, That it is the judgment of the Association of American Dairy, Food and Drug Officials that the Federal and State drug control officials should be more adequately represented on the committee having in charge the revision of the U. S. Pharmacopoeia.

STATE PHARMACEUTICAL ASSOCIATION OFFICERS FOR 1919–1920.

NORTH DAKOTA.

President, John H. Vold, Grand Forks.

First Vice-President, Homer L. Hill, Sutton.

Second Vice-President, Oscar Zuercher, Kenmare.

Secretary, R. G. Cook, Fargo.

Treasurer, W. S. Parker, Lisbon.

Executive Committee: A. C. Grant, St. Thomas; Max Strehlow, Kindred; P. L. Foss, Page.

A committee on publicity was created. It was decided to hold the meetings of the Association during the winter. Grand Forks was selected and the meeting will be held in February.

OREGON.

President, J. C. Perry, Salem.

First Vice-President, E. A. Robbins, Portland.

Second Vice-President, Claud J. Kern, Cottage Grove.

Third Vice-President, L. L. Crocker, Portland.

Secretary, A. W. Allen, Portland.

Treasurer, B. F. Jones, Portland.

This was the largest meeting in the history of the Association. The dues were raised to $12.00 annually, and an acting-secretary is to give all of his time to the Association and the

State Board of Pharmacy. The National Associations were endorsed, and coöperation with the National Drug and Chemical Alliance pledged in legislative matters.

SOUTH DAKOTA.

President, Perry H. Clute, Big Stone City.
First Vice-President, R. H. Ottman, Lead.
Second Vice-President, H. E. Anderson, Brookings.
Secretary, E. C. Bent, Dell Rapids.
Treasurer, A. A. Woodward, Aberdeen.
Local Secretary, E. R. Serles, Brookings.

President Vilas suggested stronger coöperation with the National Associations. A permanent publicity committee was created. Secretary Bent not only presented the usual statistics in his report, but paid a deserved tribute to pharmacists in the Service from South Dakota.

WASHINGTON.

President, Frank Robertson, Spokane.
First Vice-President, Harvey Young, Yakima.
Second Vice-President, Harry Ellwood, Ellensburg.
Secretary, G. Elmer Brown, Spokane.
Treasurer, Mrs. E. C. McRae, Spokane.

Legislative matters concerned the Association.

Oregon and British Columbia Associations have been invited to meet with this organization next year at the Driftwood Hotel, Long Beach, Wash.

WYOMING.

President, A. E. Roedel, Cheyenne (re-elected).
First Vice-President, John Yaeger, Rawlins.
Second Vice-President, W. P. Hays, Saratoga.
Secretary-Treasurer, E. J. O'Brien, Casper.

Torrington was selected for the 1920 meeting, and the date, August 12.

THE PHARMACIST AND THE LAW.

LIQUOR SALES IN CASES OF SUDDEN ILLNESS.

A Philadelphia U. S. Court decision acquitted a saloonkeeper who had sold whiskey as a medicine. There was then an impending epidemic of illness, but this was averted by Judge Dickinson of the U. S. District Court, Philadelphia, by a ruling which restricted such sales to cases of serious illness.

LABEL ON DENATURED ALCOHOL.

A recent circular, issued by the Commissioner of Internal Revenue as a treasury decision, notifies revenue officers concerning a new ruling relative to the labeling of packages of completely denatured alcohol. The notice states:

In view of the grave and extended abuses of the use of completely denatured alcohol reported, it is deemed necessary to print upon the labels affixed to wholesale and retail packages a further and more specific warning as to its use than is shown on the present required label.

In addition to the present matter on the labels there will be required on all new labels hereafter the printing in large letters in red ink under the skull-and-bones symbol the word "Poison," and at the bottom of the label there will be printed the following statement:—

"Completely denatured alcohol is a violent poison. It cannot be applied externally to human or animal tissue without seriously injurious results. It cannot be taken internally without inducing blindness and general physical decay, ultimately death."

Until the present stocks of labels are exhausted this additional matter may be affixed to the containers on a separate label pasted above the present required label."

AMERICAN OWNERS OF TRADE-MARKS PROTECTED BY JAPANESE COURTS.

The Supreme Court of Japan, in a suit instituted by a Philadelphia manufacturing company for the protection of its trademark rights, has handed down a decision which upholds trademark rights guaranteed under Japan's treaty agreement with the United States. The company which brought suit is the Miller Lock Co. The Japanese Patent Office decided in the company's favor and the Crown Lock Co. appealed to the Supreme Court of Japan. Every American owner of a trademark registered in Japan is now assured of protection by Japanese Courts.

NEW PUBLICATIONS.

Methods in Chemical Analysis. Frank A. Gooch. 536 pp. Price $4.00. John Wiley & Sons, New York City.

Chemical Pathology. H. Gideon Wells. Third Edition, revised, 8vo. 707 pp. Price $4.25. W. B. Saunders Co., Philadelphia.

Elements of General Science. O. W. Caldwell and W. L. Eikenberry. Revised edition. 400 pp. Price, $1.28. Ginn & Co., New York.

A Text-Book of Chemistry Intended for the Use of Pharmaceutical and Medical Students. Samuel P. Sadtler, Virgil Coblentz and Jeannot Hostman. Fifth edition, revised. J. B. Lippincott Co., Philadelphia.

Textbook of Physical Chemistry. Azariah T. Lincoln. 12-mo. 547 pp. $3.50. D. C. Heath & Co., New York.

Chemistry of Synthetic Drugs Percy May. Second edition. Revised and enlarged. 8vo. 250 pp. Price, $3.50. Longmans, Green & Co., New York.

One Thousand Technical Books. A selected list with annotations emphasizing especially elementary practical books. Compiled by Herbert L. Cowing. First edition. Washington, D. C. American Library Association; Library War Service.

Laboratory Exercises in General Chemistry. W. M. Blanchard. Second edition. 12mo. 156 pp. Price $1.00. D. Van Nostrand Co., New York.

Qualitative Chemical Analysis; A Laboratory Guide. W. W. Scott. Third edition. Revised and enlarged. 12mo. 350 pp. Price, $3.00 D. Van Nostrand Co., New York.

Handbook of Mineralogy, Blowpipe Analysis and Geometrical Crystallography. G. M. Butler. 3 volumes in one. 16mo. Price $3.50. John Wiley & Sons, New York.

Era Formulary. D. O. Haynes. Price $5.00. D. O. Haynes & Co., New York.

Handbook of Colloid Chemistry. W. Ostwald. Second English edition. Translated from third German edition by Martin H. Fischer. 8vo. 284 pp. Price $3.50. P. Blakiston's Son & Co., Philadelphia.

A System of Physical Chemistry. William C. McLewis. 3 volumes. Second edition. 8vo. 506 pp. Price 15s. Longmans, Green & Co., London.

Volumetric Analysis: A Complete Course of Volumetric Analysis. William T. Bone. 164 pp. Price, 3s. 6d. Blackie & Son, Ltd., London.

Short Hand-Book of Oil Analysis. Augustus H. Gill. Eighth edition. Revised. 209 pp. Price $2.50. J. B. Lippincott Co., Philadelphia.

Colloids in Biology and Medicine. H. Bechold. Authorized Translation from the Second German Edition, with Notes and Emendations, by Jesse G. M. Bullowa., A.B., M.D., Assistant Clinical Professor of Medicine, Fordham University. Cloth. Price, $5.00 net. Pp. 464, with illustrations. New York: Van Nostrand Company. 1919.

The Whole Truth about Alcohol. George Elliot Flint. With an Introduction by Dr. Abraham Jacobi. Cloth. Price, $1.50. Pp. 294. New York. The Macmillan Company. 1919.

OFFICERS OF THE AMERICAN PHARMACEUTICAL ASSOCIATION 1918–1919.

President—L. E. Sayre, Lawrence, Kans.
Honorary President—A. B. Stevens, Ann Arbor, Mich.
First Vice-President—Theodore J. Bradley, 70 St. Botolph St., Boston, Mass.
Second Vice-President—Harry Whitehouse, Johnson City, Tenn.
Third Vice-President—E. Fullerton Cook, 145 No. 10th St., Philadelphia, Pa.
General Secretary—William B. Day, 701 So. Wood St., Chicago, Ill.
Treasurer—Henry M. Whelpley, 2342 Albion Place, St. Louis, Mo.
Reporter on the Progress of Pharmacy—H. V. Arny, 115 West 68th St., New York, N. Y.
Editor of the Journal—E. G. Eberle, 253 Bourse Bldg., Philadelphia, Pa.
Local Secretary—Samuel L. Hilton, 1033 22nd St., N. W., Washington, D. C.
Chairman of the Council—Lewis C. Hopp, 1104 Euclid Ave., Cleveland, Ohio.
Secretary of the Council—J. W. England, 415 North Thirty-third St., Philadelphia, Pa.